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HEALTH AND SAFETY RESEARCH DIVISION PROGRESS REPORT FOR THE PERIOD APRIL 1, 1981—SEPTEMBER 30, 1982

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Director

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operated by
UNION CARBIDE CORPORATION
for the
DEPARTMENT OF ENERGY

Contents

FOREWORD

S. V. Kaye

The technical progress of the Health and Safety Research Division is reported routinely in publications of all types, technology transfer workshops, and oral presentations at scientific meetings. During the period covered by this progress report, April 1, 1981 to September 30, 1982, we published 972 articles in journals, technical reports, books, and proceedings. Members of the division's research staff have been averaging approximately 2.5 publications per year for the past two years. This high publication rate is complemented with a quest for quality and by national and international leadership in certain chosen areas.

Two Industrial Research-100 awards were received in 1981. Dr. Tuan Vo-Dinh won an award for his room temperature phosphorescence dosimeter for polynuclear hydrocarbons. Dr. Ed Arakawa's vacuum ultraviolet spectrometer was chosen also. The Industrial Research-100 awards are given in recognition of the 100 most significant patentable technology developments as chosen by an impartial group of judges in international competition.

The Health and Safety Research Division has made significant contributions to the Laboratory's "new initiatives" in risk analysis, life sciences instrumentation, and indoor air pollution studies. In the area of risk analysis a variety of new projects were funded and carried out by the staff of the Health Studies and Technology Assessments Sections in collaboration with staff from several other divisions (Environmental Sciences, Energy, Biology, Chemical Technology, Analytical Chemistry, and Fuel Recycle Divisions, and the Central Management Offices). The division now has a strong capability in risk analysis and has made several innovative contributions in terms of methodology development and applications. Several portable, real-time pollutant monitors were developed and field tested, particularly in synfuel facilities. Technology transfer prospects look very good for all of these new instruments, and some have already attracted strong industrial involvement. Our indoor air pollution studies have been jointly sponsored by the Department of Energy and the Consumer Product Safety Commission. This work stressed pollution measurements in 40 homes in the Oak Ridge-Knoxville area that were chosen on the basis of insulation type, age, heating system, design, etc.

The three activities mentioned above will continue to be pursued vigorously because new initiatives generally require several years of program building before they become fully established research programs. These activities and others in the life sciences part of the division's research programs have now advanced to the point where the key research accomplishments have been significant enough to bring favorable attention to the division and the laboratory. Our success in attracting support for the work carried out in the Health Studies and Technology Assessments Sections is reflected in the considerable number of funding sources now supporting their programs (see Appendix A). Some of the key research accomplishments of these two sections are listed below:

- Synthesized a stable iodinated fatty acid incorporating a tellurium heteratom for imaging of the myocardium.
- Invented a nondestructive surface emission monitor to measure emission of organic vapors from consumer products.
- Developed a new health risk assessment methodology for examining the relative potency of chemicals.

- Developed a multimedia environmental transport methodology for chemicals.
- Published agricultural parameters and land use information on a county level basis to implement terrestrial food-chain transport and assessment models.
- Estimated long- and short-term atmospheric concentrations and population exposures for incineration of organic hazardous substances at 22 commercial incineration sites in the U.S.
- Published unique analyses of uncertainties implicit in estimates of radiation dose and associated health effects.
- Developed new mobile gamma scanning equipment and procedures which will save DOE millions of dollars via rapid vehicular screening of suspected contaminated sites.

Some of these accomplishments required collaboration with the staff of other divisions at ORNL, while others were joint efforts within the Health and Safety Research Division. The overall programs of the division's life sciences and physical sciences components represent great diversity, yet there is a cohesiveness that allows us to bring to bear awesome scientific expertise on important problems in the complex and interrelated areas of environment, health, safety and technology.

Exciting progress was made in several areas of our basic physics research carried out by the Chemical Physics and biological and Radiation Physics Sections. Some of the key research accomplishments are the following:

- Correlated physical parameters of metals with acute toxicity in mice and drosophila.
- First direct measurement of very low-energy electron attenuation lengths in thin carbon films.
- Developed unique gas mixtures for use in diffuse-discharge switches for pulsed-power generation.
- Developed theory of surface plasmon resonance contributions to surface enhanced Raman scattering and obtained angular dependence of the effect.
- Significant progress has been made toward the development of an ion implantation mass spectrometer (Maxwell demon) and vacuum ultraviolet laser sources for the low-level detection of noble gases.
- The first measurement has been made of a ground state, three-body reaction for gaseous atomic lithium which is of fundamental importance to the field of chemical physics.
- The feasibility and possible analytical utility of a new vacuum ultraviolet light source based on third-harmonic generation has been demonstrated by spectroscopic studies including absorption and one- and two-photon ionization.
- Detailed experimental and theoretical studies have firmly established and characterized cooperative effects on multiphoton ionization which represents a fundamental addition to long-standing theories in nonlinear optics.

Our physical scientists participated in numerous interactions with foreign laboratories through collaborative visits of 17 foreign scientists to our physics program and 8 foreign trips by Health and Safety Research Division physicists to meetings and laboratories overseas. In addition, Drs. Ray Garrett, John Miller, Eph Klots, and Rufus Ritchie were on extended foreign assignments during this reporting period.

During the past reporting period, three key personnel changes were made, due to retirements and resignations. Dr. Thomas Ferrell replaced Dr. Robert Birkhoff as leader o the Submicron Physics Group, Dr. Barry Berven replaced Dr. William Goldsmith as leader of the Remedial Action Survey and Certification Activities (RASCA) Group, and Dr. Steve Sims was named leader of the Dosimetry Applications Research Group.

Several organizational changes were made which improved the division's ability to effectively complete its planned programs and activities. The Metabolism and Dosimetry Group was transferred from the Health Studies Section to the Technology Assessments Section to consolidate and strengthen activities in the radiation dosimetry area. The Exposure Analysis Group was transferred from the Technology Assessments Section to the Health Studies Section to provide for a comprehensive risk assessment capability. A newly-created Office of Risk Analysis was established to serve as ORNL's focal point for risk-related activities. Dr. Herbert Inhaber was appointed as coordinator of this new office. Because of programmatic and funding changes within the Department of Energy, the Office of Integrated Assessments and Policy Analysis was eliminated. Increased application of the division's Health Physics Research Reactor as an irradiation source, and as a focal point for personnel and accident dosimetry development, evaluation, and training on national and international levels has brought renewed recognition to the facility and its staff. This has resulted in recent designation of the reactor as one of ORNL's official "user facilities".

The Health and Safety Research Division continued to remain healthy financially although we are now competing for reduced research dollars in the areas of health, safety, and environment. We accept this challenge and intend to pursue several promising new funding prospects which will provide additional strength to the division's research programs. Motivation remains high and we are inspired by our own progress as individual researchers, as a division, and as major contributors to many important programs at ORNL.

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The Health Studies Section was established to provide a comprehensive research capability in the areas of health risk analysis and biomedical research. The section includes research capabilities in many of the major areas necessary to carry out an evaluation of the human health impacts of technology development. The Instrumentation and Measurements Group develops instrumentation to measure the nature and extent of pollutant levels within the environment, the workplace, and the home. The Exposure Analysis Group develops analytical approaches to predict the environmental transport and behavior of toxic pollutants in order to assess the potential human health impacts. The Health Effects and Epidemiology Group is developing approaches to evaluate the health risks associated with exposure to substances released from a variety of energy-related activities.

As part of the comprehensive program in health-related research, the Nuclear Medicine Group is involved in the application of nuclear technology to the diagnosis and treatment of disease and the development of radiolabeled agents for use in biomedical research.

INSTRUMENTATION AND MONITORING

A primary objective of this group is to produce new analytical tools and methods for monitoring pollutants associated with energy-related technologies. The emphasis is on field portability, rapidity of analysis, and cost-effectiveness. The past year saw an increased involvement in putting into practice several of these newly-developed instruments. Highly-sensitive formaldehyde exposure meters of both passive and active types have been employed in a Consumer Product Safety Commission-sponsored indoor air pollution study of forty Oak Ridge area homes, and in a large-scale study being conducted by the Canadian National Research Council. These devices were also used to conduct an evaluation of formaldehyde release from a number of commercial urea-formaldehyde insulation materials installed in simulated wall panels.

Under Environmental Protection Agency (EPA) contract, the technique of synchronous luminescence was applied for the purpose of screening and ranking a large number of air sample extracts to determine overall aromaticity and presence of polynuclear aromatic compounds (PNAs). The PNA vapor/liquid aerosol badge and the derivative uv-absorption spectrometer (DUVAS) have continued to provide valuable site-specific data on worker exposure levels, especially at the H-Coal plant in Catlettsburg, Kentucky. This information has particular importance to research initiatives in the areas of worker protection and pollution control technology. A new verson of the DUVAS is also being field tested as an on-line, real-time monitor of phenolics in waste-water clean-up systems.

Several innovative monitoring approaches are being developed for new, or yet to be tried, applications. One monitoring device non-destructively measures the rate of release of formaldehyde from the surfaces of consumer products. Individual source strengths can then be evaluated. This new device has been designated the Formaldehyde Surface Emission Monitor (FSEM). A new technique of surface enhanced Raman spectroscopy (SERS) is being developed as a potential tool for monitoring biologically active traces of PNAs and organophosphorus compounds.

These techniques have been developed as part of a long-standing Department of Energy (DOE) research program. Practical applications and subsequent funding have been identified with a wide variety of other agencies to conduct field work and provide the field testing necessary to facilitate technology transfer.

EXPOSURE ANALYSIS

The work in this group has emphasized development of mathematical models and computer codes to assist in predicting human exposure to environmental pollutants and the health and safety impacts associated with development and operation of various energy technologies. The Exposure Analysis group was transferred from the Technology Assessments Section to the Health Studies Section in May 1982.

A multimedia environmental transport model was developed for the EPA Office of Toxic Substances. The model will be used in a screening-level identification of new chemical substances or mixtures which may present an unreasonable risk to human health and the environment. Included in the model are algorithms for estimating pollutant concentrations in atmospheric, aquatic, and terrestrial systems including the terrestrial food-chain.

A risk assessment of hazardous waste incineration and treatment facilities is being performed for the EPA Office of Research and Development. The assessment will address the human health and safety issues associated with operation of hazardous waste incineration facilities and various hazardous waste control and treatment technologies.

An information system to support the assessment of health risks associated with coal production has been developed for the DOE Division of Environmental Impacts. The information system contains production and occupational accident/injury data for domestic coal mining and processing and documents accident, production, and employment trends for individual coal counties. These data can be combined to assess the impact within coal basins, federal regions, or any other summary area. Over 30 variables describing mine type; victim experience, job title, and age; degree of injury, etc., are available online for use as an analytical tool. A users' guide describing access to and manipulation of the datasets has been prepared.

An automated inhalation and ingestion exposure methodology is being developed with support from both the EPA Office of Research and Development and the DOE Office of Health and Environmental Research. The computer code will automatically access population, meteorological and agricultural data bases to estimate exposure from inhalation and ingestion of hazardous chemicals. Initial applications of the methodology will be to estimate human exposure resulting from development of synthetic fuel technologies and the operation of hazardous waste incineration facilities.

HEALTH EFFECTS AND EPIDEMIOLOGY

The development of a comprehensive health risk analysis approach continues as our overall research focus. Our efforts include development and subsequent application of a relative potency approach for dose-response modeling of health impact. The dose response approach is derived from an analytical evaluation of toxicological data at all levels of biological organization. This approach provides estimates of human dose response, the extent of uncertainty and range of risk in the estimate, and an evaluation of the predictive power of the biological test systems used. The approach has resulted from support provided by the EPA and DOE and has been applied to many classes of compounds found singly and in combination in coal-derived liquids. A generalized dose-response function has been successfully applied to radiation- and chemical-induced neoplasia in test animals and man.

Experimental efforts are continuing to develop various biological indicators of human exposure to various chemicals, utilizing biochemical and immunological assays. DOE-funded work is ongoing to understand mechanisms by which various electric discharge products of dielectric gases exert their toxic effects at the cellular level, mechanisms by which cytotoxicity and immune system perturbation contribute to mechanisms of carcinogenesis, and how bioassays can be designed for quantitative evaluation of toxicity using RNA metabolism as an indicator.

A major EPA epidemiological study continues on the associations between mineral and trace elements in drinking water and cardiovascular disease. Staff are also conducting sensitivity analyses for the DOE on thyroid cancer risks attributable to radiation exposure, and examining the relationship between stomach cancer and occupational exposures to chemical agents.

Through DOE support these research and assessment techniques have been applied to a wide variety of energy-related activities during the past year: coal combustion and conversion facilities, fusion reactors, nuclear power plants and proposed waste repositories, residential wood-burning, and

electrical power transmission lines. In addition, these techniques have been used generically to examine health-related issues associated with indoor air quality. Application of these research tools has provided critical input on how health-related concerns shape broader societal issues.

NUCLEAR MEDICINE

The research conducted in this area involves the development of new radiopharmaceuticals for use in nuclear medicine and other radiolabeled agents with application in biomedical and environmental research. This research program is supported by the DOE and the National Institutes of Health.

Major emphasis has been focused on the development of new agents with applications for the evaluation of heart disease and cerebral blood flow. A new class of radioiodinated long-chain fatty acids containing tellurium has demonstrated a metabolic "trapping" property in the myocardium. The position of the tellurium atom within the fatty acid has a direct impact on myocardial uptake. This effect is being evaluated. The effect of methyl-branching on the inhibition of metabolism of radioiodinated fatty acids is also being assessed. New, improved radiolabeling methods have been developed and these results have opened a new research area for labeling these agents with ^{123}I.

The parameters for ^{191}Os production and the development of the $^{191}Os \rightarrow {}^{191m}Ir$ generator system are also under investigation because of the unique application of the short-lived ^{191m}Ir radionuclide for the evaluation of heart disease in children. The availability of the Oak Ridge High Flux Isotope Reactor is crucial to this work, since the ^{191}Os is one of the few reactor-produced radionuclides used in a short-lived generator system.

Several radioiodinated barbiturates and other new agents are being evaluated for measurement of cerebral blood flow. Various ^{195m}Pt-labeled antitumor agents and ^{195}Au-labeled antirheumatoid agents are being investigated for therapeutic research.

Our research and development projects continue to be strongly complemented by active extramural collaboration through the Medical Cooperative Programs where new agents are supplied to investigators in clinics, universities, and other research institutions for clinical evaluation. These programs provide an opportunity to investigate our new agents in conjunction with established medical research programs in the fields of cardiology, cerebral function, rheumatology, and oncology.

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The Technology Assessments Section develops, evaluates, and applies instruments, procedures, models, and data bases for assessment purposes. The section thus provides many of the measurements and simulations necessary to accomplish one of the division's principal missions, i.e., estimation and evaluation of risk associated with human exposure to nuclear and nonnuclear pollutants in the work place and in the general environment. One of the section's five groups conducts a multifaceted program centered around the Health Physics Research Reactor. Another group develops and operates a comprehensive off-site radiological survey capability. The other three groups conduct research which is more theoretical in content collaborating with other researchers and drawing on the scientific literature to satisfy data needs. Each of the latter three groups contributes to the development and evaluation of assessment tools (e.g., models and data bases for estimating transport, exposure, dose, and risk) in the process of evolving state-of-the-art expertise. Projects which constitute the section's program are highlighted in the paragraphs which follow for each group, and among the division's contributions to national lead laboratory programs and assignments.

CONSEQUENCE ANALYSIS

The DOE work performed by this group is described on page 00 under the heading, Breeder Reactor Program. The DOE work is complemented with projects supported by the Nuclear Regulatory Commission (NRC) and the Environmental Protection Agency (EPA).

For the EPA a general environmental assessment model which estimates the potential health risk and environmental impact from shallow-land disposal of radioactive low-level waste has been implemented and documented. The model is currently being exercised with input data from three sites: Beatty, Nevada; West Valley, New York; and Barnwell, South Carolina. These sites represent the extremes of climate and soil permeability to be expected at such sites. For another project, a feasibility study for modeling the health risk from radioactive liquids spilled in surface waters has also been completed for EPA. For a third project, an entire suite of codes for EPA to use in standards development research related to atmospheric radionuclide releases has been implemented and documented. These codes and their associated data bases are called the CRRIS system for *C*omputerized *R*adiological *R*isk *I*nvestigation *S*ystem. This system is currently being used, not only for EPA-supplied input data, but to contribute to a DOE-sponsored project generating an Liquid Metal Fast Breeder Reactor (LMFBR) Health and Environmental Effects Document (HEED).

The Consequence Analysis Group has been responsible for a number of NRC-sponsored projects. For the Office of Regulatory Research a project to develop and implement environmental transport models and associated data bases to calculate realistic estimates of radiation doses to the general public has been completed. The final task was the development and documentation of the RAGBEEF code, the first time-dependent model of radionuclide concentrations in a beef cattle herd. A current project is identifying the sources and magnitudes of uncertainties in dose and health effects estimation from the geologic disposal of high level radioactive waste. This project is also providing NRC with assistance in preparing a contingency standard for geologic disposal of high-level waste, should an EPA standard not be available. Another project for the Office of Regulatory Research is providing to NRC the technical bases and support for revision of 10 CFR 20 to allow for disposal of solid wastes containing *de minimis* quantities of residual radioactivity.

For NRC's Office of Nuclear Materials Safety and Safeguards, a project examining the question of the risk and consequences of theft or sabotage of facilities or vehicles containing small quantities of special nuclear materials and by-product materials being such that licensees should be required to adopt further measures to safeguard them has been completed. Recommendations are documented in the final report. Another project for this office is assisting NRC in organizing and presenting a series of three symposia on low-level radioactive waste disposal focusing on the 10 CFR Part 61 rulemaking. Site suitability requirements; characterization and monitoring programs; and facility design, construction, and operating practices are covered in these symposia.

For NRC's Office of Reactor Regulation, a project assisting the NRC staff in reappraising the regulatory position on the assumptions to be used in calculating light-water reactor accident source terms has been completed. The final report documents the review of relevant bases and models and on-going research used in developing criteria for equipment qualification and emergency preparedness. For another project, modifications, improvements, and documentation for the TACT 3S computer code are being produced. The TACT 3S code is used by the NRC in analyzing design basis accidents for input to the safety evaluation reports.

ASSESSMENTS PROJECTS

The work of this group continues to represent a broad spectrum of radiological impact assessments of nuclear fuel cycle and non-fuel cycle facilities. During this reporting period, work for the Nuclear Regulatory Commission occupied most of the research effort.

Two projects for the Office of Nuclear Reactor Regulation (NRC) were begun. A study on the variability in dose estimates associated with food chain transport and ingestion of reactor radionu-

clides was completed this year. A second project to prepare a definitive and authoritative document on the assessment of environmental releases of radionuclides from nuclear facilities is nearing completion. This methodology document considers both normal operational releases and those associated with accidents.

Work for the Office of Nuclear Regulatory Research (NRC) continued with our project to determine the technology and costs associated with certification surveys of decommissioned nuclear facilities. A major milestone was completed this year with the issuance of a report detailing radiological procedures and costs for final surveys of fuel cycle and non-fuel cycle sites.

Work on environmental impact statements and appraisals continued in collaboration with the Energy Division at ORNL. Site-specific radiological impact assessments were completed for relicensing of two fuel fabrication plants, construction of a low-level waste burial facility at the Portsmouth Gaseous Centrifuge Plant and operation of ORNL facilities. In addition, work was completed on a generic environmental report for the Fusion Energy Assessment Program.

New work for the Florida Institute of Phosphate Research (FIPR) was initiated this year. In addition to conducting a series of radiological studies relating to Florida's phosphate industry, technical support is being furnished to FIPR in a scientific review and public information capacity.

REMEDIAL ACTION SURVEY AND CERTIFICATION ACTIVITIES

The Remedial Action Survey and Certification Activities (RASCA) group has been involved in performing radiological surveys for the Department of Energy's remedial action programs since 1975. Documentation of these radiological survey results is provided to DOE's Environmental and Safety Engineering Division (ESED) for their use in determining the need and priority for remedial action at each survey site. Following remedial action by other DOE contractors, this group conducts post-remedial action radiological surveys at each site to assess the adequacy of remedial action measures in order for DOE to determine what restrictions, if any, need to be placed on property use. Initially, radiological surveys were conducted by the RASCA Group at 22 inactive uranium mill sites in western states under the Uranium Mill Tailings Remedial Action Program (UMTRAP). More recently, the RASCA Group has taken a lead role in conducting comprehensive radiological surveys at sites where work with uranium and thorium was performed under contract with the Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC). Work at these latter sites is conducted under the Formerly Utilized Sites Remedial Action Program (FUSRAP). Currently, the RASCA Group is primarily responsible for characterizing properties in the vicinity of the uranium mill tailing sites.

During this reporting period, ground-level mobile gamma scanning surveys were conducted in 13 uranium mill tailings communities identified in the UMTRAP project. These scanning surveys have identified 435 vicinity properties in these various communities suspected of having uranium mill tailings material on or near the identified property. Comprehensive radiological surveys will be conducted at private, commercial and public properties so identified to determine the location and extent of the tailings contamination. In addition to the mobile gamma scanning surveys comprehensive radiological surveys were conducted at 34 vicinity properties in Canonsburg, Pennsylvania; 24 vicinity properties in Durango, Colorado; 20 vicinity properties in Salt Lake City, Utah; and 8 vicinity properties in Maywood, New Jersey. Major site radiological surveys were conducted at Shpack Landfill in Norton, Massachusetts; Finberg Field in Attleboro, Massachusetts; and the former Metal Hydrides Facility in Beverly, Massachusetts. Also, post-remedial action surveys were conducted at six properties in Middlesex, New Jersey.

Subcontractor activities within the group have developed and prepared a RASCA group procedures manual describing all activities within the group. The manual documents: (1) organization structure and operation of the group; (2) radiological survey methodology; (3) sampling procedures; (4) description and use of all instrumentation; (5) data documentation procedures; (6) report preparation, format and review process; and (7) quality assurance procedures.

Research and development of new instruments and techniques in radiological surveying and monitoring is an ongoing function of this group. The mobile scanning van was developed, tested and used during this reporting period. The mobile gamma scanning van consists of a NaI(Tl) detector system controlled by an on-board mini-computer that employs a radionuclide-specific algorithm to identify specific locations containing radioactive residual materials. Other accomplishments include development of a soil counting technique using a 6 in × 9 in NaI(Tl) well detector for rapid assessment of radionuclide concentrations in soil samples and adaptation of a previously developed cryogenic sampler to monitor off-gas fission product effluents from a high-flux isotope reactor.

DOSIMETRY APPLICATIONS RESEARCH

The Health Physics Research Reactor (HPRR) is the principal research tool for the Dosimetry Applications Research (DOSAR) Facility. It is a small, unmoderated fast reactor which can be operated up to 10^{17} fissions in the pulse mode and to 10 kW in the steady-state mode.

Four mixed-field neutron and gamma-ray dosimetry studies, the Eighteenth and the Nineteenth Nuclear Accident Dosimetry (NAD) Intercomparison Studies and the Seventh and the Eighth Personnel Dosimetry Intercomparison Studies (PDIS) were conducted using the HPRR. The large number of participants (55 organizations participated in the Eighth PDIS) indicates the continuing and growing need for these studies.

A week-long personnel radiation dosimetry training course was designed, developed, and presented. The course, approved by the American Board of Health Physics, emphasized neutron dosimetry and involved experiments with the HPRR. Nuclear power plant personnel and researchers from as far away as Taiwan attended.

The DOSAR staff collaborated with researchers from the University of Louisville and the U.S. Army to perform radioprotective drug studies. Researchers from ORNL's Biology Division used the HPRR in a myeloid leukemia study. The HPRR was operated in the pulse mode for Comparative Animal Research Laboratory studies of central nervous system damage in mice.

Using the unique capabilities of the HPRR, criticality alarm system verification tests were performed for Argonne National Laboratory, Goodyear Atomic Corporation, and Union Carbide (K-25 and Y-12 Plants).

The HPRR was used to develop calibration factors for thermoluminescent (TLD) albedo neutron dosimeters, support dosimeter development by a Brazilian Ph.D. student, study neutron scattering around shields, and provide training for nuclear engineering students.

METABOLISM AND DOSIMETRY

The Metabolism and Dosimetry group was transferred from the Health Studies Section to the Technology Assessments Section in May 1982. The group's efforts will continue to be directed toward the development of metabolic and dosimetric models for evaluation of human exposure to ionizing radiation.

Work is continuing on development of dosimetric methodologies for age-specific considerations.

During the past year Monte Carlo radiation transport calculations for internally deposited photon emitters were completed for the newborn, 1-, 5-, 10-, and 15-year old and for an adult female. The organ dose equivalent rates per unit activity in various source organs, so-called S-factors, have been completed for a limited number of radionuclides, and information has been supplied to the Medical Internal Radiation Dose (MIRD) Committee of the Society of Nuclear Medicine. A new computer code for computation of age-dependent organ dose rates following acute intake has been completed. The code contains age-dependent physiological models for the respiratory and gastrointestinal tracts and the skeleton. The latter model addresses the uptake and retention of bone seekers in the developing skeleton. Age-dependent models for the retention of systemic burdens of radionuclides remains a topic of considerable effort. In the past year these efforts have made increased use of physiological information to supplement the limited information available concerning radionuclide metabolism in children.

Effort toward updating the dosimetry for the Hiroshima and Nagasaki atomic bomb survivors has included the incorporation of the Cristy mathematical representation of the human body into an adjoint Monte Carlo transport code. The adjoint mode will provide greater computational efficiency for external radiation fields than the conventional forward Monte Carlo mode.

A detailed review of the elemental composition of the human body has been conducted. The International Commission on Radiological Protection has issued several errata to the Reference Man tabulations of elemental composition of humans. The manner in which one incorporates these corrections can significantly alter the elemental man fraction of some elements in the composition, particularly hydrogen. Thus, it was necessary to review the errata and the original Reference Man Report prior to performing the organ dose calculations. A report documenting photon and neutron kerma factors for the improved composition has been prepared. Absorbed dose per unit fluence factor for the skeletal tissues at risk, namely, red marrow and the endosteal tissues adjacent to the surfaces of mineral bone, has been developed using methodologies developed for beta emitters. Use of these factors allows the Monte Carlo calculation to be carried out in a phantom which contains a homegeneous skeleton but which reflects consideration of the detailed geometry of trabecular bone. Documentation of these efforts is in preparation.

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[1]Environmenal Sciences Division.
[2]Computer Sciences Division.
[3]Instrumentation and Controls Division.
[4]Part-time employee.
[5]Information Division.
[6]Student.
[7]Consultant.
[8]Operations Division.
[9]Industrial Safety and Applied Health Physics Division.
[10]Engineering Division, part-time employee.
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3. BIOLOGICAL AND RADIATION PHYSICS SECTION

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G. Basbas[2]
R. S. Becker[4]
D. W. Beekman[4]
R. D. Birkhoff
D. W. Bouldin[1]
W. Brandt[11]
M. C. Buncick[4]
P. J. Caldwell[4]
T. A. Callcott[5]
M. W. Carringer[4]
J. G. Carter
C. Chang[4]
L. G. Christophorou
Y. T. Chu[4]
H. W. Ellis[2]
H. Faidas[4]
A. Fatheddin[4]
T. L. Ferrell
S. M. Ghemati[4]
J.-P. Goudonnet[10]
D. Halchin[4]
M. C. Hanna[4]
R. N. Hamm
T. L. Hayden[2]
B. A. Hingerty
A. W. Hsie[7]
H. H. Hubbell, Jr.[2]
S. R. Hunter[6]
T. Inagaki[10]
K. B. Jacobson[7]
D. R. James
S. Kennerly[4]
B. N. Khare[10]
G. A. Kourouklis[6]
V. Lakdawala[6]
E. H. Lee[7]
J. W. Little[4]
D. L. McCorkle[8]
K. C. Mamola[11]
J. R. Manson[11]
C. Martin[4]
S. W. Masingo
R. A. Mathis
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R. H. Ritchie
I. Sauers
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S. M. Spyrou[4]
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F. Suits[4]
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J. E. Turner
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Activities within this section consist primarily of basic physics research studies directed toward providing new scientific knowledge of the fundamental properties of matter in all phases (gas, liquid, and solid) and of processes and mechanisms important in the interaction of pollutants with the environment and with biological materials. Summaries of the research progress this year are reported under the headings of the four groups within the section.

Although the primary mission of the section is basic research, many of our activities do have potential applications. The following are a few examples: development of methods for tagging explosives for easy detection; development of superior gaseous insulators for energy conservation in electrical power transmission; development of new technologies for low-level pollutant detection, such as surface-enhanced Raman spectroscopy and resonance ionization/time-of-flight mass spectroscopy; development of new instrumentation, such as a transmission soft x-ray spectrometer (IR-100 Award winner); development of fast gases for improved radiation detectors; and calculations in support of pion cancer radiotherapy.

ATOMIC, MOLECULAR, AND HIGH VOLTAGE PHYSICS

New insight into the fragmentation of polyatomic molecules under low-energy electron impact has been obtained from detailed studies of electron attachment processes in perfluorinated alkanes using electron beam/mass spectrometric and electron swarm techniques. A *very large negative* temperature effect has been discovered for nondissociative electron attachment (to 1-C_3F_6). The quasitrapping of electrons in dense ammonia has been studied as a function of gas density and temperature. Maxima were discovered in the electron drift velocity versus E/N (density-reduced electric field) functions for Ar/perfluoroalkane mixtures which are of interest to fast diffuse discharge switches in pulsed power applications; the properties of the gaseous medium used in such applications have been identified and specific mixtures have been invented which show promise.

The energetics of the photoionization process for organic molecules, M, embedded in alkane liquids have been investigated. It was found that in the presence of an electron attaching additive, A, the ionization threshold of M in the liquid is related to that in the gas phase by the solvation energy, $S(M^+, A^-)$ of the M^+, A^- ion pair which is $\geq$1.5 eV. The photoionization onsets of organic molecules in liquid alkanes have been studied also using our laser photoionization/conductivity technique employing one- and two-photon ionization processes. The order of the two-photon ionization process *in solution* has been shown by using photon energies away from any real intermediate state and Gaussian laser beam profiles.

New gaseous dielectric mixtures have been developed and their properties in relation to applications optimized. An explicit pressure dependence of the uniform field breakthrough strength of gaseous 1-C_3F_6 was found; pressure dependent electron attachment measurements, quadrupole mass spectrometric studies, and breakdown strength investigations as a function of gas density and temperature have suggested that the increase in the dielectric strength with gas pressure is due to the unusually large increase with pressure of the electron attaching capability of this gas. It was shown also that transient anions rather than electron attachment to van der Waals dimers are responsible for the pressure-dependent properties of this gas. In collaboration with the Laboratoire de Physique des Décharges, Gif-sur-Yvette, France, gas discharge modeling has been undertaken and measurement of isotopic dependences of dielectric strength of gases has begun.

Studies of new gas dielectrics under conditions encountered in practice (e.g., nonuniform fields, impulse stress, particle contamination, etc.) continued. Two new methods to control the large effects of metallic particle contamination on the dielectric strength of gases are being developed. One involves the forming of an insulating coating on the particle by a discharge and the other the trapping of the particle by an insulating wax layer. Additionally, the neutral chemistry of spark decomposition of SF_6 has been studied quantitatively. This includes the direct measurement of SF_4, a short-lived by-product of SF_6 discharges, and its subsequent reaction with water and insulators to form HF, SOF_2, SO_2, and SiF_4. Multicomponent gas mixtures, which effect a reduction in corrosive and toxic by-products, are currently being studied. In cooperation with the Health Effects and Epidemiology Group, the toxicity of gaseous by-products of sparked SF_6 has been investigated.

PHYSICS OF SOLIDS AND MACROMOLECULES

This group is studying some of the fundamental properties of solids and macromolecules which can be elucidated by experiments involving the interaction of photons or electrons with the sample. Knowledge gained in these basic research studies is then used to develop prototype methods and equipment for the solution of practical problems. Over the past few years the emphasis has been on

systems of biological interest and on the detection of chemical pollutants and/or their effects. Several methods have been developed for the detection and quantization of trace quantities of pollutants. Resonance ionization and time-of-flight mass spectroscopy enables all atoms of a given element to be detected in the presence of isobars and without the necessity of chemical separation. During this reporting period this technique has been used successfully for the analysis of solids. It has potential for use as a monitor for any given elemental impurity present in gases, liquids, or solids, including biological samples

When a monolayer of some organic molecules is adsorbed on small metal particles or on a rough metal surface, there is a dramatic enhancement of the Raman effect. We have found this effect to be maximized using Ag particles with dimensions of ~100 nm. We are currently investigating the use of surface-enhanced Raman scattering as a monitoring technique for environmentally important complex organic molecules. The origin of the enhancement of the Raman effect may be associated with the coupling of molecular excitations to surface plasmon resonances in the substrate.

Experiments have been performed to study the radiative decay of surface plasmons excited on non-spherical Ag particles by bombarding the particles with 15 keV electrons. The energy, polarization, and angular distribution of the emitted radiation are in good agreement with theoretical calculations. The decay of surface plasmons excited at an Ag surface has also been studied experimentally by means of a photoacoustical technique. In addition to yielding the relative probability of non-radiative and roughness-assisted radiative decay of the surface plasmons the photoacoustic technique allows an accurate determination of the absorption coefficient of materials which cannot be measured by more conventional techniques.

A collaborative effort with the Cornell Center for Space Research is in progress to measure the optical properties of "tholins." Tholins are complex organic compounds produced by electrical discharges in reducing atmospheres of methane, nitrogen, and other gases which are believed to approximate the early atmosphere of the earth and the present atmosphere of Titan. We have continued to use optical methods to study the interdiffusion of metal alloy systems. We have measured the mean free path of low-energy electrons in carbon thin films as a function of electron energy, and the values obtained agree with those predicted by our "universal" expression, derived previously from optical data, for the mean free path of low energy electrons in solid organic insulators.

A self-supporting transmission grating which we had developed previously for use in the soft x-ray and extreme vacuum ultraviolet regions was incorporated into a monochromator, which won a 1981 Industrial Research-100 Award. We have used multiwavelength detectors in conjunction with this monochromator to record a whole region of the XUV spectrum simultaneously. Design studies, funded by National Science Foundation (NSF), are underway for a unique soft x-ray fluorescence spectrometer for use at an electron-synchrotron radiation center.

SUBMICRON AND LIQUID PHYSICS

Experimental work on aloof scattering of electrons was greatly improved by development of a high-resolution energy-loss apparatus. Dispersion relations and transition rates for surface plasmon generation were measured and shown to be consistent with our theoretical calculations. Both silver and gold micro-channels (0.05 to 0.40 micron diameter) show characteristic energy loss structure.

Stopping power data for high energy electrons (11 keV to 127 keV) on copper and aluminum were published and found to be in agreement with the Bethe-Bloch theory.

Our collaboration with Professor Linda Painter at the University of Tennessee has continued in the area of optical properties of liquids. Improved reflectance data on several siloxanes were taken to 30 eV. Data were published on the properties of formamide and hexamethylphosphorictriamide.

The exact and asymptotic solutions for scattering of lights from a microcylinder-tripped half plane were shown to agree in all scattering regions from 0° to 360°.

Optical absorbance of 0.04 micron oblate spheroids of silver on a quartz substrate was measured as a function of wavelength and angle of incidence. The results were predicted with our calculations using bulk-silver optical data. The theory was thereafter extended to finding the angular dependence of surface-enhanced Raman scattering.

ANALYTIC DOSIMETRY AND SURFACE PHYSICS

This group is involved with a wide variety of basic problems in the areas of dosimetry, microdosimetry, and surface physics. In the context of the electron gas model for condensed matter systems, we examined Z_1^3 effects on stopping powers, straggling in energy loss of a charged particle, and quantal corrections to the Landau straggling distribution. A new theory of track structure and high-energy sputtering from nonmetallic solids has been developed.

In our microdosimetry program, we have studied the effects of the state of condensation of water on energy-loss phenomena. A program was begun to model the chemical evolution of a charged particle track in liquid water to times of the order of 10^{-6} s when diffusion is essentially complete and comparison can be made with measured G-values. We have also initiated a program to apply pulse characterization and computer unfolding techniques for the development of new methods for neutron dosimetry.

In the broad area of surface physics, our efforts are directed at elucidating the fundamental physical mechanisms involved in interactions of both microscopic and macroscopic particulates with condensed matter surfaces. To supplement existing classical theories, a quantum theory of the image potential was developed. Quantal recoil corrections to the theory of van der Waals forces between atoms have been worked out. Some specific problems studied include dynamical and geometrical effects in the physical adsorption of atoms, particle trajectories under the influence of an image potential, and deposition of charged particulates from laminar flow in cylinders. An extensive study of photon interactions with surface plasmons for several surface geometries was completed; and we investigated the electron-plasmon interaction near a metal surface, electronic surface states on aerosol particles, and the impact parameter dependence of plasmon excitation on small metal spheres.

In collaboration with the Biology Division, the effects of metals at the molecular, cellular, and whole animal levels are being studied both theoretically and experimentally. Data for CHO cell survival vs metal-ion concentration were obtained for 16 metals in addition to the toxicity data obtained previously for *Drosophila* and mice. High correlations were observed between chemical softness parameters and the toxic effects of metals in CHO cells, *Drosophila*, and mice. Furthermore, there are high correlations between the rankings of the toxicities of the 16 metals in these three systems. These studies have shown the importance of cellular organisms and *Drosophila* as

practical test systems for radiation exposure. We have surveyed an extensive number of physical parameters but have not found any which have a significantly better correlation with toxicity than the previously used softness parameters.

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[1]University of Tennessee R&D Subcontract.
[2]Consultant.
[3]Computer Sciences Division.
[4]Student.
[5]Part-time employee.
[6]Postdoctoral fellow.
[7]Biology.
[8]Guest assignment.
[9]Sabbatical leave from University of Western Australia.
[10]Visiting scientist.
[11]ORAU S-Contract.

4. CHEMICAL PHYSICS SECTION

W. R. Garrett

S. L. Allman	W. R. Ferrell[4]	J. C. Miller
H. A. Barnett[1]	G. W. Foltz[2]	M. H. Mittleman[3]
N. D. Brashier	W. F. Frey[3]	M. G. Payne
C. H. Chen	G. S. Hurst	R. C. Phillips
W. Christian[2]	J. Iturbe[4]	P. W. Reinhardt
W. A. Chupka[3]	J. P. Judish	J.A.D. Stockdale[4]
R. N. Compton	C. E. Klots	B. F. Thomas
C. D. Cooper[3]	S. D. Kramer	R. D. Willis[2]
P. W. Coulter[3]	B. Lehmann[2]	J. P. Young[6]

Activities in the Chemical Physics Section consist of a variety of basic physical and chemical studies that are relevant to energy-related problems in atmospheric physics and chemistry, radiation chemistry, pollutant detection technology, laser development, and analytical applications of laser techniques. Experimental techniques employed in these research efforts include molecular beams, mass spectroscopy, multiphoton ionization and saturated resonance ionization spectroscopic methodologies. Theoretical efforts are also carried out in conjunction with some of the studies. The following highlights from the Molecular Physics and Photophysics Groups provide a broad outline of the work.

MOLECULAR PHYSICS

Multiphoton ionization (MPI) spectroscopy has been the principal activity of this group during the past year. The first multiphoton ionization photoelectron spectra recorded in our group provided much new insight into the physical mechanisms of the ionization process. Measurements of angular distributions of photoelectrons have provided information of even greater detail. These experiments further indicate that multiphoton ionization photoelectron spectroscopy (MPI-PES), along with mass analysis, promise to be useful tools in many analytical applications.

Two years ago, we published an experimental and theoretical description of a new nonlinear effect in multiphoton laser spectroscopy. The experimental observation of the disappearance of ionization signal at three-photon resonance in the rare gases with increasing pressure was attributed to interference between the incident laser wave and the third-harmonic wave generated in the gaseous medium. Since that discovery, other groups have corroborated both the theoretical and experimental results. In addition, the effect has been observed in other atomic and molecular systems at Los Alamos National Laboratory. In recent experiments we have carried out detailed studies of the effects of focal lengths in focused beams, of buffer gases in focused and unfocused beams, and of counter propagating beams on the third-harmonic field influence on MPI. In addition, we have employed two-color laser experiments to further characterize the phenomenon.

A new source of ultracold negative ions and negative cluster ions has been developed during the past year. We have prepared ions of the type O_2^-, O_4^-, O_6^-, O_8^- etc. with fluxes in the order of 10^6 ions/cm^2 s. This ion source should be useful in all types of experiments where vibrationally and rotationally cold ions are desirable.

During the past year interactions between the molecular physics program and similar programs in France and Holland were strengthened through extended collaborations by C. E. Klots and W. R. Garrett with the University of Paris, Paris, France, and the Institute of Molecular Physics (FOM) in Amsterdam, The Netherlands, respectively.

PHOTOPHYSICS

The Photophysics Group has continued its style in which problems in the area of photon interactions with matter are investigated at a fundamental level with theoretical and experimental methods. These studies of matter at the atomic level are often aimed toward accumulation in practical analytical methods. Applications presently under development for our new analytical capability to detect with isotopic selectivity at the one-atom level include solar neutrino research, double-beta decay, oceanography, polar ice cap dating, and ground hydrology research for high-level nuclear waste applications.

During the past year a more general theoretical treatment has been given of the four-wave mixing process in gases, and some relevant data on the dispersion of light has been generated. This information has been used to guide experiments on the generation of laser radiation (via both frequency tripling and four-wave mixing) for resonance ionization spectroscopy (RIS) of the noble gases. Basic experiments on the resonance ionization of krypton atoms have been done in preparation for counting ^{81}Kr atoms with our Maxwell demon development. In other aspects of the Maxwell demon, improvements were made in a type of electron ionization source which would retain less memory of previous noble gas samples. Further, an atom buncher has been developed to increase the probability that an atom will be caught in a pulsed laser beam. Experiments have been completed that demonstrate isotopic enrichment with the simple quadrupole mass spectrometer in the Maxwell demon. Finally, we have under development a new system of recovery implanted atoms for recycled enrichment. The method makes use of a low-melting point indium target and looks promising according to the initial tests. While the present emphasis is on ^{81}Kr counting for solar neutrino flux measurements, polar ice dating, and groundwater age determinations, the work in ^{39}Ar dating of ocean water is also progressing and will utilize all of the capability developed thus far.

Our facilities for chemical kinetics studies using RIS have been improved, and we maintain an active role in the studies of gas phase rate constants and diffusion coefficients. Detailed studies of the statistical behavior of small populations of atoms and molecules show that the fluctuation phenomena involved in molecular concentration, atomic concentration, photodissociation, photoionization, and collision frequency are "random"—further, a system of diffusing atoms appears "ergodic."

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[1] Instrumentation and Controls Division.
[2] Guest assignment.
[3] Consultant.
[4] Student.
[5] Part-time.
[6] Analytical Chemistry Division.

5. OFFICE OF RISK ANALYSIS

H. Inhaber

The Office of Risk Analysis (ORA) was organized in November 1981. Its major objective is to help in coordination of the diverse research on risk underway at ORNL. This research ranges from detailed analysis of the effects of pollutants in the Biology Division to calculations of some risks of reactor accidents in the Engineering Physics Division to contracts on the perception of risk in the Engineering Physics Division. Until the formation of this office, there was little formal contact between researchers from various disciplines, with the result that there often was little knowledge passed between disciplines and divisions. One of the objectives of ORA is to improve this flow of information, to produce better understanding of risk for funding agencies and decision makers.

For the foreseeable future, the overwhelming majority of risk research at ORNL will be done in the divisions, not ORA. The major sources of expertise lie in the divisions.

ORA has at least four major functions. First is the coordination of research. This is accomplished by regular meetings of the Advisory Committee to ORA. This commmittee is made up of representatives of about ten divisions, who report on the research carried on in their areas and pass on the information they have gathered to their divisions. This committee has met frequently, and minutes of its deliberations are available.

A second function is responsibility for the proposed Risk Information Center. This center would gather and arrange data from a wide variety of sources. At present, much material has been assembled in a Risk Data Base and discussions are going forward with funding agencies to determine the need for a Risk Information Center, and who would be its users. At present, the Risk Data Base is being used on a small scale.

A third function is to develop initiatives in risk on behalf of the divisions. The objective here is to identify these initiatives; the divisions still have the responsibility for formulating proposals. Discussions have been held with a variety of agencies. Most prominent was a lengthy trip to Department of Defense agencies in February 1982. Other proposals discussed have dealt with matters such as the risk of hazardous waste sites, under EPA, and the risks of fusion energy, under the Office of Fusion Research, DOE. Funding was secured from the Office of Health and Environmental Research, DOE, to determine the effect of risk anaiysis on the selection of research projects. This work is being conducted primarily by the Information Division of ORNL.

The final function of the office is to conduct research on risk. This has comprised (1) developing a guidebook on risk for the Environmental Compliance Division, DOE, to aid in assessing environmental impact statements; and (2) preparing brief summaries of the risk of coal liquefaction, diesel engines and changing from large cars to small ones for the Office of Program Planning and Analysis, ORNL. The objective of this work is to determine the major areas of risk of energy-related activities and using this knowledge to suggest where overall funding might be most effective.

6. HEALTH AND ENVIRONMENTAL RISK ANALYSIS PROGRAM

The Department of Energy's Health and Environmental Risk Analysis Program (HERAP) was established to provide a means to assess the risks associated with emerging energy technologies. This type of risk analysis is based upon a quantitative evaluation of the potential health and environmental risks associated with a given technology. Staff in the Health and Safety Research Division have been involved in an assessment of two developing energy technologies from the standpoint of health risk assessment. The two technological evaluations have focused on the liquid metal fast breeder reactor (LMFBR) and the process of direct coal liquefaction. The assessments of health risk conducted by our staff are being documented as Health and Environmental Effects Documents (HEEDs).

COAL LIQUEFACTION

P. J. Walsh

The Coal Liquefaction HEED project was initiated in 1981. The first HEED report was produced in October, 1981. The second and current HEED report provides a systematic evaluation of the potential health impacts associated with an installed 1 quad (1 quadrillion btu) direct coal liquefaction industry. This industry is comprised of two 0.1-quad plants located at each of five generic sites distributed throughout the U.S.

The results of the study indicate that a large fraction of the impacts of the 1-quad industry are associated with front-end fuel cycle activities including mining and transportation. These effects would be typical of other uses of the same coal supply. Therefore, the report focused on toxic material exposures and some associated health effect endpoints, especially cancer, that may be of generic concern for coal liquefaction facilities.

The 1982 Coal Liquefaction HEED utilized a unique methodology to evaluate the potential impacts associated with exposure to the many classes of chemicals found singly and in combination in coal-derived synthetic fuels. A relative potency approach was used to characterize the potential health impacts. This approach makes greater use of available data and modeling options than traditional animal-to-man extrapolation techniques. The relative potency approach provides estimates of human dose response function, the extent of uncertainty in and the range of estimated effects, and some evaluation of the predictive power of the biological test systems used to generate the toxicological data. Use of this approach also serves to identify gaps in available data as a means of prioritizing research needs.

LIQUID METAL FAST BREEDER REACTOR (LMFBR) FUEL CYCLE

H. R. Meyer

This project, initiated in the spring of 1982, is intended to provide for the U.S. Department of Energy a balanced assessment of the risks associated with operation of a mature LMFBR industry. To facilitate comparison of results with other ongoing HERAP Projects, a nation-wide LMFBR industry with some 50 reactors producing a total of 1 quad (1 quadrillion btu) of useable electrical energy is used as the basis for the study.

Siting of reactors and other facilities is based upon either a current, light-water-reactor situation, or on a hypothetical scenario displaced from current siting to reduce level of population expo-

sure while retaining access to the power distribution grid and sufficient cooling water. Analysis of population risks and sensitivity of these risks to reactor siting variations is being performed during the initial phase of the project. Results of this effort will be distributed for technical review in October 1982.

Methodologies recently developed at ORNL allow use of various types of site-specific data for this analysis; such factors as local crop statistics and climatological conditions, as well as regional meteorological data and local population data, are being employed to establish the sensitivity of dose estimates to parameter variations. Such analysis can be useful in identifying and prioritizing research needed to reduce such uncertainties.

7. CONTRIBUTIONS TO NATIONAL AND LEAD LABORATORY PROGRAMS AND ASSIGNMENTS

ORNL SYNTHETIC FUELS PROGRAM

R. B. Gammage and H. R. Meyer

Staff of the Health and Safety Research Division have participated in the ORNL Life Sciences in Synthetic Fuels Program through on-site participation at the coal to synthetic oil pilot plant at Catlettsburg, Kentucky, and the University of Minnesota coal to low-btu gas demonstration plant at Duluth, Minnesota. These contributions involve the application of instrumentation and health risk assessment methodologies developed as part of research programs supported by the DOE Office of Health and Environmental Research.

Field tests of new monitoring devices have continued at the coal to synthetic oil pilot plant. The polynuclear aromatic (PNA) passive badge has demonstrated considerable promise as either a personal or area monitoring device. Polynuclear aromatic hydrocarbon vapors and aerosols containing pyrene, fluoranthene, and quinoline have been measured. The badge has also been used to descriminate between high and low exposure areas and quantitate the levels of exposure to personnel working in those areas. The derivative ultraviolet absorption spectrometer (DUVAS) was used as a real-time monitor for fugitive emissions of volatile aromatic vapors such as benzene and naphthalene. The DUVAS has also been adapted for use as a real-time monitor for phenolics in waste water and is being field tested in the prototype cleanup systems at the pilot plant. Synchronous luminescence techniques have been shown to be very accurate and cost-effective methods for screening and analyzing key organic components in air sample extracts and show favorable promise as alternatives to the NIOSH non-compound specific benzene solubles method.

Significant contributions were also made by Health and Safety Research Division staff to two DOE-sponsored workshops on prioritization of research related to synthetic fuels and atmospheric transport modeling requirements for risk assessment. The analytical tools developed by Health and Safety Research Division staff have played a critical role in measuring and assessing the potential health impact of exposure to toxic materials released from these facilities.

HIGH VOLTAGE PROGRAM

M. O. Pace

The Health and Safety Research Division is one of four divisions participating in the Power Systems Technology Program (PSTP) at ORNL. The program involves monitoring, subcontracting, and performing "in-house" work in high voltage research and development for the DOE Electric Energy Systems Division.

This division's PSTP in-house research has been (1) to synthesize previously unavailable gases needed for dielectrics research and to investigate economic and technical feasibility of mass production processes, (2) to test dielectrics developed in the division's gas dielectrics program in actual industrial sites and then to analyze the test products at ORNL, (3) to test sparked gases for toxicity, and (4) to develop means to avoid the reduction in dielectric strength of a gas-insulated system by (unavoidable) contaminating particles.

The division has awarded and now manages two ORNL subcontracts for PSTP work, provides technical monitoring for three contracts that had been awarded by DOE in Washington before the PSTP inception, and aids DOE in planning future work in high voltage.

NUCLEAR REGULATORY COMMISSION

R. O. Chester

The ORNL NRC Program Organization corresponds to the NRC Organization. The ORNL NRC Program Director, A. L. Lotts, has program managers for each of the divisions in the Office of Nuclear Regulatory Research (RES), as well as a program manager for each of the offices: Reactor Regulation, Nuclear Material Safety and Safeguards, and Analysis and Evaluation of Operational Data. The ORNL NRC Health, Siting, and Waste Management Program Manager is R. O. Chester for the ORNL programs sponsored by the RES Division of Health, Siting, and Waste Management (HSWM). ORNL has projects in each of the four program areas of NRC HSWM: Waste Management, Health Effects, Earth Sciences, and Siting and Environment. Individual projects within this program are conducted principally in five ORNL Divisions: Environmental Sciences, Energy, Health and Safety Research, Engineering Technology, and Chemistry.

Within the Health and Safety Research Division there are seventeen NRC-sponsored projects in both the research and technical assistance categories. Nine of these projects are technical assistance and eight are research. The technical assistance projects utilize a cross-section of the diverse technical staff of the division. The projects include: Radiation Monitoring Instrumentation for Uranium Mills, Safeguards Analysis for Byproduct Materials and Small Quantities of Special Nuclear Material, Statistical Analysis of Dose Estimates via Food Pathways, Modifications of TACT Code, presenting Three Symposiums on Low Level Waste, Survey of Metabolic Data for High Level Waste, Examining Source Term Assumptions for Operating Reactors, Producing a Textbook on Health Physics, and Analysis of IAEA Transactions. The research projects, however, are primarily in the areas of dosimetry modeling and radionuclide transport in the biosphere.

BREEDER REACTOR PROGRAM

Charles W. Miller

As part of the DOE Liquid Metal Fast Breeder Reactor safety effort, a project is underway which has as its objectives the identification of models available for environmental radiological assessments; evaluation of model structure, simplifying assumptions, and data bases; estimation of uncertainties in model output; and, when possible, recommendation of models and parameters which are best suited to particular assessment situations. When needs are identified, recommendations are also made for further environmental and biomedical research.

Recent efforts in this project have concentrated on estimating the uncertainty associated with radiological assessment models previously recommended for use in breeder reactor assessments. Uncertainty estimates have been made for models of atmospheric and hydrologic transport, terrestrial and aquatic food-chain bioaccumulation, and internal and external dosimetry. These uncertainty estimates indicate that, for many sites, generic models and representative parameter values may be used to calculate doses from annual average radionuclide releases when these calculated doses are on the order of one-tenth or less of a relevant dose limit. For short-term, accidental releases, however, the uncertainty in the dose calculations may be much larger than an order of magnitude.

WASTE DISPOSAL PROGRAM

C. A. Little

C. A. Little assisted the national Low-Level Waste Management Program Office (LLWMPO) by serving as scientific secretary of the Interagency Low-Level Waste Modeling Committee. The prime accomplishment of the committee was to convene a workshop to assess the state-of-the-art of modeling for low-level waste (LLW) purposes. That meeting, held December 1-4, 1980, in Denver, Colorado, culminated in report number ORO-821, "Modeling and Low-Level Waste Management: An Interagency Workshop," compiled by C. A. Little and L. E. Stratton. The report contains position papers by representatives of the four sponsoring agencies (USDOE, USEPA, USGS, and USNRC), 16 technical papers describing state-of-the-art modeling practice, and summaries of four workshops. The report was published in June, 1981.

In addition, D. E. Fields and C. A. Little have reviewed several papers and reports of low-level waste modeling interest at the request of the LLWMPO.

Appendix A. Budget and Support Distribution

	Actual FY 1980 ($K)	Actual FY 1981 ($K)	Actual FY 1982 ($K)
Army	3	62	36
Consumer Product Safety Commission	72	120	219
Department of Energy			
Basic Energy Sciences	73	70	82
Breeder Reactors	276	234	238
Coal			25
Economic Regulatory Administration	80	60	
Electric Energy Systems	684	769	749
Environmenta Research-Development	4,236	5,187	5,539
Life Sciences	1,677	1,602	1,743
Remedial Action Program	387		
Solar	74	35	
Space Nuclear Systems	192		
Environmental Protection Agency	878	1,173	912
EG&G		31	54
Federal Drug Administration	31	23	39
Florida Phosphate Research Institute			225
Massachusetts General Hospital			96
National Heart, Lung, and Blood Institute		48	67
Naval Surface Weapons Center			30
Nuclear Regulatory Commission	813	1,041	1,142
Office of Naval Research	60	75	56
PEDCO Environmental, Inc.			37
United States Air Force	80	75	80
Other	71	42	78
In-House Total	9,687	10,647	11,447
Outside Subcontracts	1,090	1,832	1,714
Total Division	10,777	12,479	13,161

The division continues to operate in a sound financial position. Adequate funds are available to support our staff, and we have a wide variety of sources of funding. The table compares the money that was in the division financial plan for FY1980, FY1981, and FY1982.

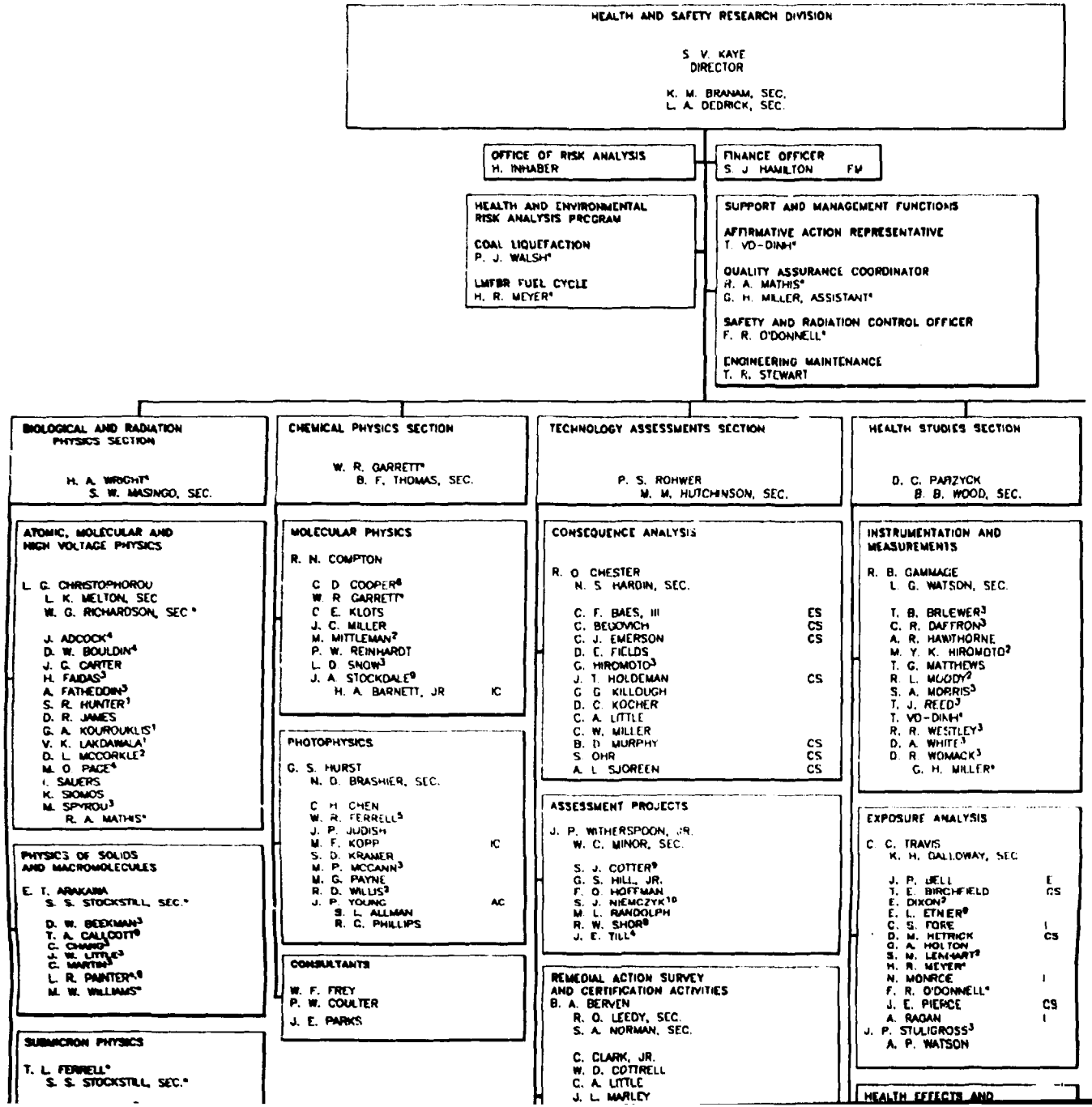
Appendix B. Personnel Summary

	Technical		Support		Total	
	1981	1982	1981	1982	1981	1982
Permanent employees	90	81	22	22	112	103
Temporary, >10 months	12	12	0	0	12	12
Division supported loanees	1	1	0	0	1	1
Loaned out	0	0	0	0	0	0
Part-time	6	6	1	0	7	6
Assigned guests	35	31	0	0	35	31
Co-ops	0	0	4	0	4	0

To run the division efficiently and effectively requires many types of employees. The various sources used to staff the division are shown in the table. We experienced a decrease of nine people in our permanent staff.

During the year there was a total of 31 guests assigned to the division. The guests were from universities, laboratories, and private companies. Some were assigned for a few months but most were assigned for a period of a year or more. We view the use of assigned guests as a economical way to bring different and diversified talents to the division.

Appendix C. Organization Chart



S. S. STOCKSTILL, SEC.*

D. W. BEEKMAN[3]
T. A. CALLCOTT[8]
C. CHANG[3]
J. W. LITTLE[3]
C. MARTIN[3]
L. R. PAINTER[6,8]
M. W. WILLIAMS*

SUBMICRON PHYSICS

T. L. FERRELL*
S. S. STOCKSTILL, SEC.*

M. C. BUNCICK[3]
Y. T. CHU[1]
D. J. HALCHIN[3]
S. W. KENNERLY[3]
L. R. PAINTER[6,8]
R. J. WARMACK

ANALYTIC DOSIMETRY AND SURFACE PHYSICS

R. H. RITCHIE
S. S. STOCKSTILL, SEC.*
W. G. RICHARDSON, SEC.*

V. E. ANDERSON	CS
J. C. ASHLEY	
T. L. FERRELL*	
R. N. HAMM	
B. L. HINGERTY	
A. W. HSIE	B
K. B. JACOBSON	B
S. MITRA	B
S. K. NIYOGI	B
A. TODD[3]	
J. E. TURNER	
M. W. WILLIAMS*	
H. R. WITSCHI	B
H. A. WRIGHT*	

CONSULTANTS

G. BASBAS
W. BRANDT
H. W. ELLIS
T. L. HAYDEN
H. H. HUBBELL, JR.
K. C. MAMOLA
J. R. MANSON
J. NEUFELD
C. C. SUNG

J. P. YOUNG	AC
S. L. ALLMAN	
R. C. PHILLIPS	

CONSULTANTS

W. F. FREY
P. W. COULTER
J. E. PARKS

S. J. NIEMCZYK[10]
M. L. RANDOLPH
R. W. SHOR[8]
J. E. TILL[4]

REMEDIAL ACTION SURVEY AND CERTIFICATION ACTIVITIES

B. A. BERVEN
R. O. LEEDY, SEC.
S. A. NORMAN, SEC.

C. CLARK, JR.
W. D. COTTRELL
C. A. LITTLE
J. L. MARLEY
P. T. PERDUE
D. A. WITT
R. W. DOANE
B. S. ELLIS
J. B. KARK
D. A. ROBERTS
J. A. ROBERTS
W. H. SHINPAUGH

DOSIMETRY APPLICATIONS RESEARCH

C. S. SIMS
J. L. GRANT, SEC.

E. BAILIFF	O
L. W. GILLEY	O
R. T. GREENE	
L. B. HOLLAND	O
R. E. SWAJA	
S. L. THOMPSON[3]	
G. R. PATTERSON	ISHP

METABOLISM AND DOSIMETRY

K. F. ECKERMAN
B. P. WARREN SEC.

S. R. BERNARD	
N. W. COOK	LS
M. T. CRISTY	
L. T. DILLMAN[4]	
D. E. DUNNING, JR.[4]	
C. S. FORE	I
R. T. GOELTZ	CS
N. B. GOVE	CS
G. D. KERR	
R. W. LEGGETT	
P. PURDUE[4]	
F. F. ROWE	CS
J. C. RYMAN	CS
G. G. WARNER	CS
L. R. WILLIAMS[4]	
M. O. YALCINTAS	
M. YILDIRAN[7]	

CONSULTANTS

J. W. POSTON
K. J. SCHAGER
D. R. STONE

E. DAVON[9]	
E. L. ETNIER[8]	
C. S. FORE	I
D. M. HETRICK	CS
G. A. HOLTON	
S. M. LENHART[2]	
H. R. MEYER[4]	
N. MONROE	I
F. R. O'DONNELL*	
J. E. PIERCE	CS
A. RAGAN	I
J. P. STULIGROSS[3]	
A. P. WATSON	

HEALTH EFFECTS AND EPIDEMIOLOGY

P. J. WALSH*
R. J. PIERCE, SEC.
H. J. BURUM, SEC.

E. E. CALLE	
E. D. COPENHAVER	
C. S. DUDNEY	
C. E. EASTERLY	
G. D. GRIFFIN	
T. D. JONES	
L. KUPPER[4]	
P. MCSWEENEY[4]	
M. MORRIS	CS
L. W. RICKERT	I
C. A. SIGLER[1]	
M. UZIEL	
E. A. ZEIGHAMI	

NUCLEAR MEDICINE

F. F. KNAPP, JR.
L. K. ALEY, SEC.

K. R. AMBROSE	
J. M. BECKER[4]	
T. A. BUTLER	
M. M. GOODMAN	
J. D. HOESCHELE	
G. W. KABALKA[4]	
K. A. R. SASTRY[7]	
P. C. SRIVASTAVA	
A. P. CALLAHAN	
E. B. CUNNINGHAM[8]	
C. E. GUYER	
B. A. OWEN	

CONSULTANTS

K. R. LONG
A. F. RUPP
A. SOLOMON

PRINCIPAL MEDICAL COOPERATIVES

L. C. FORD
UNIVERSITY OF CALIFORNIA

K. HUBNER
OAK RIDGE ASSOCIATED UNIVERSITIES

A. LORBER
MEMORIAL LONG BEACH HOSPITAL

R. RAHN
BIOLOGY DIVISION, ORNL

P. RICHARDS
CHEMISTRY DEPARTMENT, BNL

H. W. STRAUSS
MASSACHUSETTS GENERAL HOSPITAL

S. TREVIS
CHILDREN'S HOSPITAL, BOSTON

D. A. TURNER
RUSH-PRESBYTERIAN-
ST. LUKE'S MEDICAL CENTER

H. N. WAGNER
JOHNS HOPKINS UNIVERSITY

W. WOLF
UNIVERSITY OF SOUTHERN CALIFORNIA

R. WOLFANGEL
MALLINCKRODT, INC.

* DUAL CAPACITY
1 POSTDOCTORIAL FELLOW
2 GUEST ASSIGNMENT
3 STUDENT
4 SUBCONTRACT
5 ORAU FELLOWSHIP PARTICIPANT
6 SABBATICAL LEAVE
7 VISITING SCIENTISTS
8 ORAU FACULTY RESEARCH PARTICIPANT
9 PART-TIME
10 ON LOAN TO CHEMICAL TECHNOLOGY DIVISION

AC ANALYTICAL CHEMISTRY
B BIOLOGY
CS COMPUTER SCIENCES
E ENGINEERING
ES ENVIRONMENTAL SCIENCES
FM FINANCE AND MATERIALS
I INFORMATION
IC INSTRUMENTATION AND CONTROLS
ISHP INDUSTRIAL SAFETY AND APPLIED HEALTH PHYSICS
O OPERATIONS

Appendix D. Honors and Awards

E. T. Arakawa

Fellow, American Physical Society

P. J. Caldwell and E. T. Arakawa

IR-100 Award for Extreme Ultraviolet Monochromator, 1981

G. S. Hurst

Member of Panel for Radiation Research (Evaluation Panel for the National Bureau of Standards), July 1982–June 1983

P. T. Perdue

American Nuclear Society, Certificate of Appreciation for Outstanding Service in connection with the ANS exhibit "Our Radioactive World" at the World's Fair, 1982.

T. Vo-Dinh

IR-100 Award for Passive PNA Vapor Monitor, 1981

Appendix E. Seminar Program

G. A. Holton and A. P. Watson

The seminar program for the Health and Safety Research Division was directed by A.P. Watson from April 1, 1981 to May 5, 1982. On this date G. A. Holton was appointed Division Coordinator. The Seminar Coordination Committee was chosen to provide representation for each of the four sections in the division. The committee was comprised of J. K. Baird, M. M. Goodman, C. A. Little, and J. A. Stockdale.

Seven division seminars were hosted by the program. Industry, academic institutions, and foreign research organizations were represented in the Health and Safety Research Division Seminar Program. The following is a list of seminar speakers and their topics.

Cecil B. Pickett

Department of Biochemistry, Merck, Sharp & Dohme Research Labs, Rahway, New Jersey, "Molecular Basis of Induction of Cytochrome P_{448} and Glutathione Transferase B," April 9, 1981.

Lawrence L. Kupper

Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina, "Logistic Regression Analysis as a Tool in Human Health Effects Studies," May 18, 1981.

Martin Oberhofer

Commission of European Communities, Ispra, Varese, Italy, "Radiation Monitoring and Protection Experience at European Nuclear Facilities." April 9, 1982.

Robert C. Weber

Air Engineering Division, Environmental Research and Technology, Pittsburgh, Pennsylvania, "Uncertainty of Volatile Organic Compound Emission Estimation," May 17, 1982.

William C. Lee

Office of Coal Gasification, Tennessee Valley Authority, Knoxville, Tennessee, "Environmental Aspects of Entrained-Flow Coal Gasification," June 21, 1982.

Herwig G. Paretzke

Institute for Radiation Research (GSF), Neuherberg, West Germany, "Charged-Particle Track Structure," June 23, 1982.

John Crawford

Swiss Institute for Nuclear Research, Zurich, Switzerland, "Neutrino Detection and Pion Radiotherapy Experiments at SIN," August 6, 1982.

Appendix F. Advisory Committee

Advisory Committee Members

A. R. Buhl, Ph.D. Technology for Energy Corporation	Engineering Science
W. C. Lineberger, Ph.D. University of Colorado	Chemistry
S. Treves, M.D. Children's Hospital, Boston	Nuclear Medicine
G. H. Whipple, Ph.D. Retired, University of Michigan	Health Physics/Public Health

Appendix G. Publications and Presentations

JOURNALS AND BOOKS

1
Ambrose, K.R.; Lowrey, J.S. "Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo," *Cancer Res. 42, 1769-73 (1982)*

2
Arakawa, E.T.; Caldwell, P.J.; Williams, M.W. "Transmission Gratings for the Extreme Ultraviolet," *Opt. Eng. 20, 753-5 (1981)*

3
Arakawa, E.T.; Williams, M.W.; Ashley, J.C.; Painter, L.R. "The Optical Properties of Kapton: Measurement and Applications," *J. Appl. Phys. 52, 3579-82 (1981)*

4
Ashley, J.C. "Density Effect in Liquid Water," *Radiat. Res. 89, 32-7 (1982)*

5
Ashley, J.C. "Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene," *Radiat. Res. 90, 433-6 (1982)*

6
Ashley, J.C. "Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials," *J. Electr. Spectros. Relat. Phenom. (in press)*

7
Ashley, J.C. "Stopping Power of Liquid Water for Low-Energy Electrons," *Radiat. Res. 89, 25-31 (1982)*

8
Ashley, J.C.; Anderson, V.E. "Interaction of Low Energy Electrons with Silicon Dioxide," *J. Electr. Spectrosc. Relat. Phenom. 24, 127-48 (1981)*

9
Ashley, J.C.; Ferrell, T.L.; Ritchie, R.H. "Probes for Sub-Micron Structures," *Proc. 2nd Annual Workshop on the Physics and Chemistry of Energy-Related Atmospheric Pollution, Harper's Ferry, W VA, April 21-23,1981 (in press)*

10
Ashley, J.C.; Ritchie, R.H. "The Energy Losses of Channeled Ions - the Bohr Theory Revisited," *v.1, pp 166-71, Atomic Collisions in Solids, Proc. 7th Int. Conf.. Moscow, Sept.21,1977, Moscow State Univ. Publ. House, 1981*

11
Ashley, J.C.; Ritchie, R.H.; Echenique, P.M. "Spatial Dispersion Effects in the Interaction between Metal Surfaces," *Solid State Commun. 40, 599-601 (1981)*

12
Ashley, J.C.; Tung, C.J. "Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV," *Surf. Interface Anal. 4, 52-5 (1982)*

13
Baes, C.F., III "Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios," *Trans. Am. Nucl. Soc. 41, 53-4 (1982)*

14
Baes, C.F., III; Sharp, R.D. "A Proposal for Estimation of Soil Leaching and Leaching Constants for Use in Assessment Models," *J. Environ. Qual. (in press)*

15
Baes, C.F., III; Sharp, R.D. "Predicting Radionuclide Leaching from Root Zone Soil for Assessment Applications," *Trans. Am. Nucl. Soc. 38, 111 (1981)*

16
Baird, J.K.; Escott, S.P. "On Departures from the Stern-Volmer Law for Fluorescence Quenching in Liquids," *J. Chem. Phys. 74, 6993-5 (1981)*

17
Baird, J.K.; McCaskill, J.S.; March, N.H. "On the Theory of the Stern-Volmer Coefficient for Dense Fluids," *J. Chem. Phys. 74, 6812-6 (1981)*

18
Barton, T.P.; Easterly, C.E. "Fusion Reactor Neutron Dosimetry," *Health Phys. 40, 219-22 (1981)*

19
Basbas, G.J.; Ritchie, R.H. "Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms," *Phys. Rev. A 25, 1943-62 (1982)*

20
Becker, R.S.; Anderson, V.E.; Birkhoff, R.D.; Ferrell, T.L.; Ritchie, R.H. "Surface Plasmon Dispersion on a Single-Sheeted Hyperboloid," *Can. J. Phys. 59, 521-9 (1981)*

21
Becker, R.S.; Hubbell, H.H., Jr.; Ferrell, T.L.; Birkhoff, R.D. "Electron Energy Losses in Cylindrical Microchannels: Scattering at a Distance," *Physical Rev. B (submitted)*

22
Beene, J.R.; Bemis, C.E., Jr.; Kramer, S.D.; Young, J.P. "Laser Optical Studies of the Spontaneous-Fission Isomer 240m-Am," *Lasers in Nuclear Physics, Harwood Academic Publishers (in press).*

23
Beene, J.R.; Bemis, C.E., Jr.; Young, J.P.; Kramer, S.D. "Study of the Fission Isomer Am-240 Using Laser Induced Nuclear Polarization," *Hyperfine Interactions 9,143 (1981).*

24
Bernard, S.R. "Chapter 6.3: Mathematical Models in Internal Dose Estimation," *pp 331-66, Handbook of Radiation Protection and Measurement, CRC Press, Boca Raton, FL, 1982*

25
Bernard, S.R. "Mathematical Models in Internal Dose Estimation," *Handbook of Radiation Protection and Measurement (A. Brodsky, ed.), Chemical Rubber Co., Cleveland, OH., (1982)*

26
Bernard, S.R.; Chen, S.M. "Dose to the Gall Bladder from a Technetium-99M Labeled Gall Bladder Scanning Agent," *pp 546-53, Proc. 3rd Int. Radiopharmaceutical Dosimetry Symp., Oak Ridge, TN, Oct.7-10,1980, U.S. Dep. of Health and Human Services, 1981*

27
Bernard, S.R.; Nestor, C.W., Jr.; Eisele, G.R. "Mathematical Studies of the Absorption into Blood of Am-241 Citrate Following Oral Intubation into the Stomach of Miniature Swine," *Proc. Am. Soc. Exp. Biol. 41(4), 1329 (1982)*

28
Bernard, S.R.; Nestor, C.W., Jr.; Eisele, G.R.; Eckerman, K.F. "Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate," *Health Phys. 43(1), July 1982*

29
Bernard, S.R.; Purdue, P. "A Metabolic Model for Hg as Inorganic Hg and Methyl Hg," *Health Phys. 41, 849 (1981)*

30
Berven, B.A., Myrick, T.E.; Perdue, P.T. "Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program," *Trans. Am. Nucl. Soc. 41, 235-6 (1982)*

31
Birkhoff, R.D.; Heller, J.M., Jr.; Painter, L.R.; Ashley, J.C.; Hubbell, H.H., Jr. "Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV," *J. Chem. Phys. 76, 5208-13 (1982)*

32
Birkhoff, R.D.; Hubbell, H.H., Jr.; Ashley, J.C.; Painter, L.R. "Yield and Mean Free Paths of Photoelectrons from Liquid Hexamethylphosphorictriamide," *Phys. Rev. B (submitted)*

33
Birkhoff, R.D.; Hubbell, H.H., Jr.; Ashley, J.C.; Painter, L.R. "Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Triamide," *J. Chem. Phys. (in press).*

34
Broyde, S.; Hingerty, B.E. "Conformation of the Deoxydinucleoside Monophosphate dCpdG Modified with 2-aminofluorene," *Biochemistry (submitted)*

35
Broyde, S.; Hingerty, B.E. "DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement," *Chem. Biol. Interactions 40, 113 (1982)*

36
Broyde, S.; Hingerty, B.E.; Stellman, S. "Deformation of DNA by Carcinogenic Agents," *V. 1, pp. 455-64, Biomolecular Stereodynamics, Adenine Press, New York (1981)*

37
Buncick, M.C.; Hubbell, H.H., Jr.; Birkhoff, R.D.; Warmack, R.J.; Becker, R.S. "A Computer-Controlled Method for Removal of Stray Magnetic Fields," *Review of Scientific Instruments (in press)*

38
Buncick, M.C.; Hubbell, H.H., Jr.; Birkhoff, R.D.; Warmack, R.J.; Becker, R.S. "A Computer-Controlled Method for Removal of Stray Magnetic Fields," *Rev. Sci. Instrum. (in press)*

39
Buncick, M.C.; Hubbell, H.H., Jr.; Birkhoff, R.D.; Warmack, R.J.; Becker, R.S. "A Computer-Controlled Method for Removal of Stray Magnetic Fields," *Review of Scientific Instruments (in press)*

40
Busenberg, S.N.; Travis, C.C. "Approximation of Functional Differential Equations by Differential Systems," *Proc. Volterra and Functional Differential Equations Conf., Blacksburg, VA, June 10-13,1981 (in press)*

41
Caldwell, P.J.; Arakawa, E.T.; Callcott, T.A. "Extreme Ultraviolet Transmission Grating Monochromator," *Appl. Opt. 20, 3047-9 (1981)*

42
Casey, D.L.; Digenis, G.A.; Wesner, D.A.; Washburn, L.C.; Chaney, J.E.; Hayes, R.L.; Callahan, A.P. "Preparation and Preliminary Tissue Studies of Optically Active C-11- D- and L- Phenylalanine," *Int. J. Appl. Radiat. Isotopes 32, 325-30 (1981)*

43
Chang, C.; Callcott, T.A.; Arakawa, E.T. "Diffusion of Au into Sn Thin Films Studied by the ATR Method," *J. Appl. Phys. (in press)*

44
Chang, C.; Callcott, T.A.; Arakawa, E.T. "Diffusion of Au into Sn Thin Films Studied by the Attenuated Reflection Method," *J. Appl. Phys. (in press)*

45
Chen, C.H. "Detection of a Few Atoms or Molecules by Lasers," *ORAU Traveling Lecture, University of Alabama, Tuscaloosa, AL, April 15, 1982.*

46
Christie, N.T.; Jacobson, K.B. "Genetic and Environmental Factors Determine the Levels of Q(+) tRNA in Drosophila," *Genetics 97, S22 (1981)*

47
Christie, N.T.; Jacobson, K.B. "Toxicity of Metal Ions in Drosophila: Characterization by Statistical Parameters," *Fed. Proc. 40, 700 (1981)*

48
Christie, N.T.; Owenby, R.K.; Jacobson, K.B.; Hiatt, V.S.; Farkas, W.R. "Queunine-Containing Isoacceptor of Tyrosine tRNA in Droscphila Melanogaster: Alteration of Levels by Divalent Cations," *Biochim. Biophys. Acta (in press)*

49
Christophorou, L.G. "Electron and Ion Swarms," *Proc. 2nd Internatinal Swarm Seminar, Oak Ridge National Laboratory, Oak Ridge, Tennessee, July 22-23, 1981 Pergamon Press (1981).*

50
Christophorou, L.G. "Electronegative Gases," *pp 133-76, Electrical Breakdown and Discharges in Gases, Part A, Fundamental Processes and Breakdown, Proc. NATO Advanced Studies Inst., Les Arcs, France, June 28-July 12,1981, Plenum Publ. Corp., New York, 1982*

51
Christophorou, L.G. "Gaseous Dielectrics III," *Proc. 3rd International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982, Pergamon Press (1982).*

52
Christophorou, L.G. "Negative Ion States of Polyatomic Molecules," *pp 11-34, Photon, Electron, and Ion Probes of Polymer Structure and Properties, Am. Chem. Soc. Symp. Ser. 162, 1981*

53
Christophorou, L.G. "The Role of Electron Swarm Studies in the Development of Gaseous Dielectrics," *pp. 21-34, Electron and Ion Swarms (L. G. Christophorou, Ed.), Pergamon Press (1981)*

54
Christophorou, L.G.; Carter, J.G.; Maxey, D.V. "Electron Motion in High-Pressure Polar Gases: Ammonia," *J. Chem. Phys. 76, 2653-61 (1982)*

55
Christophorou, L.G.; Hunter, S.R.; Carter, J.G.; Mathis, R.A. "Gases for Possible Use in Diffuse-Discharge Switches," *Appl. Phys. Lett. 41, 147-9 (1982)*

56
Christophorou, L.G.; Hunter, S.R.; Carter, J.G.; Spyrou, S.M. "Gases for Possible Use in Diffuse-Discharge Switches," *Proc. Workshop on Diffuse Discharge Opening Switches, Tamarron, CO, January 13-15, 1982, pp. 236-251 (1982)*

57
Christophorou, L.G.; James, D.R.; Mathis, R.A. "Dielectric Gas Mixtures with Polar Components," *J. Phys. D, Appl. Phys. 14, 675-92 (1981)*

58
Christophorou, L.G.; James, D.R.; Pai, R.Y. "Gas Breakdown and High-Voltage Insulating Gases," *v.., pp 87-167, Applied Atomic Collision Physics, Academic Press, New York, 1982*

59
Christophorou, L.G.; James, D.R.; Pai, R.Y. "Gas Breakdown and High-Voltage Insulating Gases," *Appl. Collision Physics (B. Bederson, Ed.), Academic Press, New York (in press).*

60
Christophorou, L.G.; Mathis, R.A.; James, D.R.; McCorkle, D.L. "On the Role of Electron Attachment in the Breakdown Strength of Gaseous Dielectrics," *J. Phys. D, Appl. Phys. 14, 1889-901 (1981)*

61
Christophorou, L.G.; McCorkle, D.L.; Sauers, I. "Tagging Materials for Detection of Explosives," *Anal. Chim. Acta 135, 179-92 (1982)*

62
Chu, Y.T.; Anderson, V.E.; Hubbell, H.H., Jr.; Ferrell, T.L. "The Asymptotic Solution for the Diffraction of an Electromagnetic Plane Wave by a Cylinder-Tipped Half-Plane," *J. Opt. Soc. of Am.l Society of America (submitted)*

63
Chu, Y.T.; Anderson, V.E.; Hubbell, H.H., Jr.; Ferrell, T.L. "The Asymptotic Solution for the Diffraction of an Electromagnetic Plane Wave by a Cylinder-Tipped Half-Plane," *J. Opt. Soc. Am.l Society of America (submitted)*

64
Chu, Y.T.; Birkhoff, R.D.; Hubbell, H.H., Jr. "Radiation from Creeping Waves on Micron-Size Perfectly Conducting Fibers," *Phys. Rev. A 24, 1176-83 (1981)*

65
Colley, J.L.; Cristy, M.; Warner, G.G. "Specific Absorbed Fractions for Photon Sources Uniformly Distributed in the Heart Contents and Heart Wall of a Heterogeneous Phantom," *J. Nucl. Med. 22, 65-71 (1981)*

66
Compton, R.N.; Alton, G.D.; Pegg, D.J. "Photodetachment Cross Sections for He-4Po," *Inst. Electr. Electron Eng. Trans. Nucl. Sci. NS-28(2), 1198-1202 (1981).*

67
Compton, R.N.; Miller, J.C. "Multiphoton Ionization of Atoms and Molecules," *p.319, Laser Techniques for Extreme Ultraviolet Spectroscopy, Proc. Am. Inst. Phys. Conf., Boulder, CO, Mar.8-10,1982, Am. Inst. Phys., 1982*

68
Compton, R.N.; Reinhardt, P.W. "Collisional Ionization Between Fast Alkali Atoms and C6F6," *Chem. Phys. Lett. 91, 268 (1982).*

69
Compton, R.N.; Reinhardt, P.W.; Schweinler, H.C. "Formation of Gas Phase Negative Ions in Vinylene Carbonate," *Int. J. Mass Spectrome. Ion Phys. (in press)*

70
Coulter, P.W.; Ritchie, R.H. "Off-Shell Effects in One-Photon Free-Free Absorption," *Phys. Rev. A 24, 3051-60 (1981)*

71
Crawford, D.J. "An Age-Dependent Model for the Kinetics of Uptake and Removal from the GI Tract," *Health Phys. (submitted)*

72
Crawford, D.J. "Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung," *Phys. Med. Biol. 27, 539–52 (1982)*

73
Crawford, D.J. "The Ethical Imperatives of Theories," *Health Phys. 40, 264 (1981)*

74
Crawford, D.J. "The Radiological Impact of Rn–219 and Its Effect on Rn–222 Risk Assessment," *Health Phys. 41, 165–71 (1981)*

75
Crawford, D.J.; Eckerman, K.F. "Modification of the ICRP Task Group Lung Model to Reflect Age–Dependence," *Rad. Prot. Dosim. (submitted)*

76
Crawford, D.J.; Frazier, W.K.; Reynolds, B.A.; Patch, K.D.; Haywood, F.F.; Goldsmith, W.A.; Perdue, P.T.; Berven, B.A. "Device for the Measurement of Ac–227 in Solid Samples," *Rev. Sci. Instrum. 52, 1240–2 (1981)*

77
Cristy, M. "Active Bone Marrow Distribution as a Function of Age in Humans," *Phys. Med. Biol. 26, 389–400 (1981)*

78
Cristy, M. "Development of Mathematical Pediatric Phantoms for Internal Dose Calculations: Designs, Limitations, and Prospects," *pp 496–517, Proc. 3rd Int. Radiopharmaceutical Dosimetry Symp., Oak Ridge, TN, Oct.7–10,1980, Dep. of Health and Human Services, Bureau of Radiological Health, HHS Publ. FDA 81–8166, 1981*

79
Cristy, M. "Mathematical Phantoms for Evaluation of Age–Specific Internal Dose," *Trans. Am. Nucl. Soc. 38, 60 (1981)*

80
Donohue, D.L.; Young, J.P.; Smith, D.H.; "Determination of Rare Earth Isotope Ratios by Resonance Ionization Mass Spectrometry," *Int. J. Mass Spectro. Ion Phys. (in press).*

81
Dudney, C.S.; Walsh, P.J.; Owen, B.A. "On the Application of Short Term Biotests to Health Risk Analysis of Fluorinated Compounds," *pp. 427–432, Gaseous Dielectrics III (L. G. Christophorou, Ed.), Pergamon Press, New York, March 7–11, 1982*

82
Dunning, D.E., Jr.; Schwarz, G. "Imprecision in Predicted Dose from Cs–137 Resulting from Biological Variability," *Trans. Am. Nucl. Soc. 38, 63 (1981)*

83
Dunning, D.E., Jr.; Schwarz, G. "Variability of Human Thyroid Characteristics and Estimates of Dose from Ingested I–131," *Health Phys. 40, 661–75 (1981)*

84
Easterly, C.E. "Cancer Link to Magnetic Field Exposure: A Hypothesis," *Am. J. Epidemiol. 114, 169–74 (1981)*

85
Easterly, C.E. "Cardiovascular Risk from Exposure to Static Magnetic Fields," *Am. Ind. Hyg. Assoc. 43, 533–9 (1982)*

86
Easterly, C.E. "Occupational Radiation Exposures at a Fusion Power Station," *Nucl. Technol./Fusion 2, 723–39 (1982)*

87
Echenique, P.M.; Ashley, J.C.; Ritchie, R.H. "Coherent States and the Interaction of Swift Ions with Condensed Matter," *Eur. J. Phys. 3, 25–9 (1982)*

88
Echenique, P.M.; Nieminen, R.M.; Ritchie, R.H. "Density Functional Calculation of Stopping Power of an Electron Gas for Slow Ions," *Solid State Commun. 33, 779–81 (1981)*

89
Echenique, P.M.; Ritchie, R.H.; Barberan, N.; Inkson, J. "The Semiclassical Image Potential at a Solid Surface," *Phys. Rev. B 23, 6486–93 (1981)*

90
Eckerman, K.F. "The Impact of Risk Considerations on Dosimetry of Radiopharmaceuticals," *Trans. Am. Nucl. Soc. 38, 59 (1981)*

91
Ehsaleh, D.R.; Knapp, F.F., Jr.; Yasuda, T.; Coffey, J.L.; Kopiwoda, S.Y.; Strauss, H.W. "Myocardial Imaging with Te-123m-9-Telluraheptadecanoic Acid," *J. Nucl. Med. 22, 994–9 (1981)*

92
Emanuel, W.R.; Killough, G.G.; Olson, J.S. "Modelling the Circulation of Carbon in the World's Terrestrial Ecosystems," *Section 5.10 in Global Carbon Modelling--SCOPE 16, B. Bolin (ed.), Chichester, UK, John Wiley & Sons Ltd. (1981).*

93
Emanuel, W.R.; Killough, G.G.; Post, W.M.; Shugart, H.H., Jr. "Modeling Terrestrial Carbon Cycling at the Global Scale," *Global Dynamics of Biosphere Carbon (S. Brown, Ed.), pp. 166–194 (1981), CONF-8108131.*

94
Emanuel, W.R.; Killough, G.G.; Post, W.M.; Shugart, H.H., Jr. "Modeling Terrestrial Ecosystems in the Global Carbon Cycle with Shifts in Carbon Storage Capacity by Land-Use Change," *Ecology (in press).*

95
Etnier, E.L.; Watson, A.P. "Health and Safety Implications of Alternative Energy Technologies. II. Solar," *Environ. Manage. 5, 409–25 (1981)*

96
Fatheddin, A.; Pace, M.O.; Christophorou, L.G.; Pai, R.Y. "Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures," *pp 183–90, Gaseous Dielectrics III, Proc. 3rd Int. Symp., Knoxville, TN, Mar.7–11,1982, Pergamon Press, New York, 1982*

97
Ferrell, T.L. "Surface-Enhanced Raman Scattering in Ag-Pyridine Sols," *Phys. Rev. B 25, 2930–2 (1982)*

98
Fields, D.E.; Little, C.A. "Determination of a Polar Population Distribution from a County Oriented Data Base," *Health Phys. 41, 551–4 (1981)*

99
Fields, D.E.; Miller, C.W.; Cotter, S.J. "Comparison of Observed and Predicted Sector-Averaged Air Concentrations for Elevated Releases of Fluorescein Particles," *J. Air Pollut. Control Assoc. (ACPA) 31, 871–6 (1981)*

100
Fields, D.E.; Miller, C.W.; Cotter, S.J. "The AIRDOS-EPA Computer Code and Its Application to Intermediate Range Transport of Kr-85 from the Savannah River Plant," *Proc. Symp. Intermediate Range Atmospheric Processes and Technology Assessment, Gatlinburg, TN, Oct.1–3,1980, 1981*

101
Frees, L.C.; Sauers, I.; Christophorou, L.G.; Ellis, H.W. "Positive Ions Observed in Sparked Sulfur Hexafluoride and Sulfur Hexafluoride–Containing Mixtures at 40 kPa," *Proceedings from Conf. Mass Spectrometry and Allied Topics, Minneapolis, May 24–29, 1981, pp. 144–45*

102
Frees, L.C.; Sauers, I.; Ellis, H.W.; Christophorou, L.G. "Observation of Ions from a Spark Discharge in Sulfur Hexafluoride at 13–67 kPa," *Chem. Phys. Lett. 81, 528–30 (1981)*

103
Frees, L.C.; Sauers, I.; Ellis, H.W.; Christophorou, L.G. "Positive Ions in Spark Breakdown of Sulfur Hexafluoride," *J. Phys. D, Appl. Phys. 14, 1629–42 (1981)*

104
Gammage, R.B. "Ceramic Beryllium Oxide Dosimeters for Tritium and Radon Monitoring," *Proc. 6th Int. Symp. on Exoelectron Emission and Applications, H. Glaefeke and W. Wild, eds., Rostock University Publication No. G52/81, pp. 151–53 (1981)*

105
Gammage, R.B.; Chowdhury, A. "Partial Optimization of Electrochemical–Etching Parameters for Highly Sensitive Cr–39 Fast Neutron Dosimeters," *Health Phys. 43, 225–9 (1982)*

106
Gammage, R.B.; Chowdhury, A. "Partial Optimization of Electrochemical–Etching Parameters for Highly Sensitive Cr–39 Fast Neutron Dosimeters," *Proc. 8th DOE Workshop Personnel Neutron Dosimetry, Optimum Electrochemical Etching Parameters for Cr–39 Fast Neutron Dosimeters, Louisville, KY, June 17–19, 1981, pp. 64–76, PNL–SA–9950, Oct. 1981*

107
Gammage, R.B.; Glasson, D.R.; Hodgson, I.R.; O'Neill, P. "Microcrystalline Structure of Milled Dolomite and Its Constituent Carbonates," *J. Colloid Interface Sci. (in press)*

108
Gardner, R.H.; O'Neill, R.V.; Hoffman, F.O. "Assessing Model Uncertainties," *Proc. Symp. on Uncertainties Associated with the Regulation of the Geologic Disposal of High–Level Radioactive Waste (D. C. Kocher, ed.) pp. 199–208, CONF–810372 (1982)*

109
Garrett, W.R. "Electron Interactions with Polar Molecules," *Proc. 12th Int. Conf. Physics of Electronic and Atomic Physics, Gatlinburg, TN, July 15–21, 1981, pp. 65–77 (S. Datz, ed.)*

110
Garrett, W.R. "Excited States of Polar Negative Ions," *J. Chem. Phys. 77, 3666–73 (1982).*

111
Gentry, R.D.; Travis, C.C. "Bounds for Global Tritium Population Doses," *Health Phys. 40, 73–8 (1981)*

112
Gentry, R.D.; Travis, C.C. "The Existence and Extremal Characterization of Eigenvalues for an N–Th Order Multiple Point Boundary Value Problem," *Ann. Del Math. Pura et Appl. 76, 223–32 (1981)*

113
Glownia, J.H.; Riley, S.J.; Colson, S.D.; Miller, J.C.; Compton, R.N. "Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra," *J. Chem. Phys. 77(1), pp. 68–76, 1982.*

114
Goldsmith, W.A.; Poston, J.W.; Perdue, P.T.; Owens, M.E. "Rn-222 and Progeny Measurements in 'Typical' East Tennessee Residences," *Health Phys. (in press)*

115
Goodman, M.M.; Knapp, F.F., Jr. "Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent," *J. Org. Chem. 47, 3004-6 (1982)*

116
Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Ferren, L.A. "Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent," *J. Med. Chem. 25, 613-8 (1982)*

117
Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Ferren, L.A.; Coffey, J.L. "Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent Exhibiting Prolonged Myocardial Retention," *J. Nucl. Med. 23, 904-8 (1982)*

118
Goudonnet, J.P.; Begin, G.M.; Arakawa, E.T. "Surface Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates," *Chem. Phys. Lett. (in press)*

119
Griffin, G.D.; Owen, B.A.; Atchley, C.E.; Solomon, A.M.; Walsh, P.J.; Novelli, G.D. "Immunoglobulin (IgG) Production in a Human Lymphoblastoid Cell Line: Alteration by Melphalan, a Cancer Chemotherapy Agent," *Proc. Am. Assoc. Cancer Res. 22, 108 (1981)*

120
Griffin, G.D.; Owen, B.A.; Easterly, C.E.; Walsh, P.J. "In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells," *pp. 420-425, Gaseous Dielectrics III (L. G. Christophorou, Ed.), Pergamon Press, New York, March 7-11, 1982*

121
Griffin, G.D.; Owen, B.A.; Lynch, A.; Atchley, C.E.; Walsh, P.J.; Solomon, A.M.; Novelli, G.D. "Control of Synthesis and Excretion of Immunoglobulin (IgG) by a Human Lymphoblastoid Cell Line," *Fed. Proc. 40, 1702 (1981)*

122
Halford, D.K. "Repopulation and Food Habits of Teromycus Manicula," *Northwest Sci. 55, 44-9 (1981)*

123
Hamm, R.N.; Rustgi, M.L.; Wright, H.A.; Turner, J.E. "Energy Spectra of Heavy Fragments from the Interaction of Protons with Communications Materials," *Inst. Electr. Electron. Eng. Trans. Nucl. Sci. NS-28, 4004-6 (1981)*

124
Hamm, R.N.; Turner, J.E.; Wright, H.A.; Ritchie, R.H. "Calculated Distance Distributions of Energy Transfer Events in Irradiated Liquid Water," *V. 1, pp. 717-26, Proceedings of the Seventh Symposium on Microdosimetry, Oxford, England, (1981)*

125
Hardgove, G.L.; Einstein, J.R.; Hingerty, B.E.; Wei, C.H. "The Structure of Adenine Dinitrate, (C5H7N52+)(NO3-)2," *Acta Crystallogr. (in press)*

126
Hass, B.S.; Webb, R.B. "Photodynamic Effects of Dyes on Bacteria," *Mutat. Res. 81, 277-85 (1981)*

127
Hawthorne, A.R.; Gammage, R.B. "Formaldehyde Release from Simulated Wall Panels Insulated with Urea- Formaldehyde Foam Insulation," *J. Air Pollut. Control Assoc. (in press)*

128
Hawthorne, A.R.; Matthews, T.G.; Vo-Dinh, T. "Measurement Techniques," *Chapter in Indoor Air Quality, CRC Press (P. J. Walsh and C. S. Dudney, eds.) (submitted)*

129
Hayden, T.L.; Turner, J.E.; Williams, M.W.; Cook, J.S.; Hsie, A.W. "A Model for Cadmium Transport and Distribution in CHO Cells," *Comput. Biomed. Res. 15, 97-110 (1982)*

130
Hingerty, B.E.; Brown, R.S.; Jack, A. "Further Refinement of Yeast tRNA Phenylalanine," *V.1, pp. 293-302, BioMolecular Structure, Conformation, Function and Evolution, (R. Srinivasar, ed.), Pergamon Press, Oxford, (1981)*

131
Hingerty, B.E.; Brown, R.S.; Klug, A. "Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by [Co(NH3)6]3+: X-ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove," *Biochim. Biophys. Acta 697, 78 (1982)*

132
Hingerty, B.E.; Broyde, S. "Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine," *Int. J. Quantum Phys. (in press)*

133
Hingerty, B.E.; Broyde, S. "Conformation of the Deoxydinucleoside Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino) fluorene," *Biochemistry 21, 3243 (1982)*

134
Hingerty, B.E.; Broyde, S. "Conformation of the Deoxydinucleoside Monophosphate dCpdG Modified at the Guanine Amino Group with 2-(Acetylamino) Fluorene," *Biochemistry (submitted)*

135
Hingerty, B.E.; Broyde, S.; Olson, W.K. "The Poly(rU) Coil: A Minimum Energy Model that Matches Experimental Observations," *Biopolymers 21, 1167 (1982)*

136
Hoffman, F.O.; Garten, C.T., Jr.; Huckabee, J.W.; Lucas, D.M. Interception and Retention of Technetium by Vegetation and Soil," *J. Environ. Qual. 11, 134-41 (1982)*

137
Hoffman, F.O.; Garten, C.T., Jr.; Lucas, D.M.; Huckabee, J.W. "Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments," *Environ. Sci. Technol. 16, 214-7 (1982)*

138
Holton, G.A. "A Mathematical Model for Calculating Optimal Ozone Control Strategies," *Proc. Energy and Ecological Modeling Symp., Louisville, Apr.20-23,1981, pp. 375-380 (1981).*

139
Hoy, H.C.; O'Donnell, F.R. "Occupational Risk from Nuclear Power," *Trans. Am. Nucl. Soc. 41, 46-8 (1982)*

140
Hunter, S.R.; Christophorou, L.G.; James, D.R.; Mathis, R.A. "Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases," *pp 7-20, Gaseous Dielectrics III, Proc. 3rd Int. Symp., Knoxville, TN, Mar.7-11,1982, Pergamon Press, New York, 1982*

141
Hurst, G.S. "Counting the Atoms: Some Applications in Chemistry," *J. Chem. Education (in press).*

142
Hurst, G.S. "Resonance Ionization Spectroscopy," *Anal. Chem. 53, 1448A-56A (1981)*

143
Hurst, G.S. "Resonance Ionization Spectroscopy," *pp 586-9, Encyclopedia of Science and Technology, McGraw-Hill, 1982*

144
Hurst, G.S. "Single Particle Detection: Gaseous Devices," *v.5, pp 201-18, Applied Atomic Collision Physics, Academic Press, Inc., 1982*

145
Hurst, G.S. "Single-Particle Detection: Gaseous Devices," *201-218 in Applied Atomic Collision Physics, Vol. 5, H.S.W. Massey, E. W. McDaniel, ad B. Bederson, Eds., Academic Press, New York (1982).*

146
Hurst, G.S.; Chen, C.H.; Kramer, S.D.; Payne, M.G.; Willis, R.D. "A Radiochemical Solar Neutrino Experiment Using 81(upsilon,e-) 81Kr," *Proc. Workshop on Science Underground, Los Alamos National Laboratory, September 26-October 1, 1982 (in press).*

147
Hurst, G.S.; Kramer, S.D.; Lehmann, B.E. "Resonance Ionization Spectroscopy for Low-Level Counting," *pp 149-58, Nuclear and Chemical Dating Technique, Interpreting the Environmental Record, Am. Chem. Soc. Symp. Ser. 176, 1982*

148
Hurst, G.S.; Payne, M.G.; Chen, C.H.; Willis, R.D Lehmann, B.E.; Kramer, S.D. "Resonance Ionization Spectroscopy: Counting Noble Gas Atoms," *Proc. Laser Spectroscopy, A.R.W. McKellar, T. Oka, and B.P. Stoicheff, Eds., Springer-Verlag, New York (1981)*

149
Inagaki, T.; Arakawa, E.T.; Callcott, T.A. "Optical Properties of Diffusion-Formed Di-Gold Aluminide," *J. Appl. Phys. 52, 5597-602 (1981)*

150
Inagaki, T.; Arakawa, E.T.; Cathers, A.R.; Glastad, K.A. "Optical Properties of Liquid Pb and Bi between 0.6 and 3.7eV," *Phys. Rev. B 25, 6130-8 (1982)*

151
Inagaki, T.; Arakawa, E.T.; Williams, M.W. "Optical Properties of Liquid Mercury," *Phys. Rev. B 23, 5246-62 (1981)*

152
Inagaki, T.; Kagami, K.; Arakawa, E.T. "Photoacoustic Observation of Nonradiative Decay of Surface Plasmons in Silver," *Phys. Rev. B 24, 3644-6 (1981)*

153
Inagaki, T.; Kagami, K.; Arakawa, E.T. "Photoacoustic Study of Surface Plasmons in Metals," *Appl. Opt. 21, 949-54 (1982)*

154
Inagaki, T., Nakagawa, Y.; Arakawa, E.T.; Aas, D.J. "Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry," *Phys. Rev. B 26, (1982)*

155
Inhaber, H. "Coping with the Biomedical Literature - Book Review," *Scientometrics 4, 171-2 (1982)*

156
Inhaber, H. "Energy Production Risks Science and Personalities," *Risk Analysis 1, 9 (1981)*

157
Inhaber, H. "Energy Risk Assessment," *Gordon and Breach, New York (in press).*

158
Inhaber, H. "Essays of an Information Scientist, Vol. 3, 1977–1978 – Book Review," *Scientometrics 3, 401–2 (1981)*

159
Inhaber, H. "Golden Days...or Brass?," *ORNL Review 14, 12–15 (1981)*

160
Inhaber, H. "On Discussion of Risk of Energy Systems," *Amer. J. Pub. Hlth. 72, 613 (1982)*

161
Inhaber, H. "Review of "Coping with Biomedical Literature"," *Scientiometrics (4), 171–2 (1982).*

162
Inhaber, H. "Review of "Energy and the Quality of Life: Understanding Energy Policy", by C. A. Hooker et al.," *Queen's Quarterly (in press).*

163
Inhaber, H. "Risk and Consequences in Energy Production," *Vol. II, Petroleum in Mexico and the World, Edmundo Flores, Ed., (in press).*

164
Inhaber, H. "Risk of Energy Production and Conservation," *Proc., International Institute for Applied Systems Analysis, Laxenburg, Austria, Sept. 1981*

165
Inhaber, H. "Risk of Energy Production from Conventional and Non-conventional Sources," *La Energia Nuclear, National Council of Science and Technology of Mexico (in press).*

166
Inhaber, H. "Shortfalls in On-Road Fuel Economy: Implications for Public Policy," *Energy Policy (in press).*

167
Inhaber, H. "Small: Is it Beautiful, or Is it Brutal?," *ORNL Lab News, 4–5 (August 1982).*

168
Inhaber, H. "The Risk of Producing Energy," *Philosophical Transactions of the Royal Society, A376, 121–132 (1981)*

169
Inhaber, H. "The Risk of Producing Energy," *The Assessment and Perception of Risk, p. 121–131, 1981*

170
Inhaber, H. "What is the Total Risk of Energy Systems?," *pp. 295–320, Measurement of Risks, 1981.*

171
Inhaber, H. "Whipple's Treatment of Energy Production Risks," *Risk Anal. 1, 37–9 (1981)*

172
Inhaber, H. "Why Risk-Free Energy Isn't What it Seems to Be," *Societal Costs of Energy Alternatives, Methodologies and Results, Georgia Institute of Technology, Atlanta, GA (in press).*

173
Inhaber, H.; Caton, G.M.; Gove, R.M. "Health Risk Associated with Energy Conservation," *Trans. Am. Nucl. Soc. 41, 50–51 (1982)*

174
Inhaber, H.; Norman, S.A. "Increase of Interest in Risk Analysis," *Risk Analysis (in press).*

175
Jacobson, K.B.; Opresko, L.; Owenby, R.K.; Christie, N.T. "Effects of Cadmium on Drosophila: Toxicity, Proteins, and Transfer RNAs," *Toxicol. Appl. Pharmacol. 60, 368 (1981)*

176
Jacobson, K.B.; Turner, J.E.; Christie, N.T.; Owenby, R.K. "Toxic and Biochemical Effects of Divalent Metal Ions in Drosophila: Correlation to Effects in Mice and to Chemical Softness Parameters," *The Science of the Total Environment (in press)*

177
Jones, T.D. "Hematologic Syndrome in Man Modeled from Mammalian Lethality," *Health Phys. 41, 83–103 (1981)*

178
Jones, T.D. "Neutrons in Hiroshima?," *Health Phys. 42. 537–9 (1982)*

179
Jones, T.D.; Griffin, G.D.; Dudney, C.S.; Walsh, P.J. "Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents," *v.5, pp 243–52, Chemical Analysis and Biological Fate, Polynuclear Aromatic Hydrocarbons, Battelle Press, 1981*

180
Kark, J.B.; Perdue, P.T.; Goldsmith, W.A.; Roberts, D.A. "Isotopic Analysis of Soil Samples by Germanium Gamma Spectroscopy," *Health Phys. (submitted)*

181
Kerr, G.D. "A Review of Dosimetry for the Atomic Bomb Survivors," *Nucl. Safety 23(5), (in press)*

182
Kerr, G.D. "Dosimetry for the Japanese Atomic Bomb Survivors," *Med. Phys. 9, 644 (1982)*

183
Kerr, G.D. "Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors," *Proc. DOE Symp. Series CONF-810928 (in press)*

184
Kerr, G.D. "Review of Dosimetry for the Atomic Bomb Survivors," *Proc. Vol. 1, pp. 501–13, Radiation Protection Aspects, G. Burger and H. G. Ebert, eds., EUR-7448 EN, 1981*

185
Kerr, G.D. "Review of Dosimetry for the Atomic Bomb Survivors," *Rad. Res. 88, 473 (1981)*

186
Killough, G.G.; Emanuel, W.R. "A Comparison of Several Models of Carbon Turnover in the Ocean with Respect to Their Distributions of Transit Time and Age, and Responses to Atmospheric Carbon Dioxide and C-14," *Tellus 33, 274–90 (1981)*

187
Killough, G.G.; Emanuel, W.R. "Distributions of Transit Time and Age for Several Models of Carbon Turnover in the Ocean," *Energy and Ecological Modelling (W. J. Mitsch and R. W. Bosserman, eds.), pp. 45-50, Elsevier, Amsterdam-Oxford-New York. (1981).*

188
Killough, G.G.; Till, J.E.; Etnier, E.L.; Murphy, B.D.; Rariden, R.J. "Dose Equivalent Due to Atmospheric Releases of Carbon-14," *Models and Parameters for Environmental Radiological Assessments, Chapter 11, DOE/TIC-11368 (in press)*

189
Klots, C.E. "Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions," *Chem. Phys. 67, 75-81 (1982)*

190
Klots, C.E. "Solubility of Protons in Water," *J. Phys. Chem. 85, 3585-8 (1981)*

191
Klots, C.E. "Van der Waals Molecules - Linking the Gas and Liquid Phases," *Radiat. Phys. Chem. 20, 51-6 (1982)*

192
Knapp, F.F., Jr. "Selenium and Tellurium as Carbon Substitutes," *v.1, pp 345-[illegible], Radiopharmaceuticals, Structure-Activity Relationships, Proc. Symp., Hartford, CT, Mar.21-23,1980, Grune and Stratton, 1981*

193
Knapp, F.F., Jr. "Sn-117m-Labeled Radiopharmaceuticals - Effects of Structural Modifications on the Adrenal Uptake of Steroids Labeled in the Sidechain with Sn-117m," *v.1, pp 567-78, Medical Radionuclide Imaging, Proc. IAEA Symp., Heidelberg, Federal Republic of Germany, Sept.1-5,1980, IAEA, 1981, IAEA SM-247/89*

194
Knapp, F.F., Jr.; Ambrose, K.R.; Callahan, A.P. "Potential Pancreatic Imaging Agents-Tellurium-123m-Labeled DL-Alpha-Amino-Gamma-(Phenyl telluro) Butyric Acid," *J. Med. Chem. 24, 794-7 (1981)*

195
Knapp, F.F., Jr.; Ambrose, K.R.; Callahan, A.P.; Ferren, L.A.; Grigsby, R.A.; Irgolic, K.J. "Effects of Chain Length and Tellurium Position on the Myocardial Uptake of Te-123m-Fatty Acids," *J. Nucl. Med. 22, 988-93 (1981)*

196
Knapp, F.F., Jr.; Butler, T.A.; Ambrose, K.R.; Callahan, A.P.; Guyer, C.E.; Roberts, J.A.; Ferren, L.A. "New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids," *Proceedings - Symposium on Practical Applications of Nuclear and Radiochemistry, Chapter 28,347, Pergamon Press, New York (1982)*

197
Kocher, D.C. "A Dynamic Model of the Global Iodine Cycle and Estimation of Dose to the World Population from Releases of Iodine-129 to the Environment," *Environ. Int. 5, 15-31 (1981)*

198
Kocher, D.C. "Models and Risk from High-Level Waste Disposal - The Missing Pieces," *Trans. Am. Nucl. Soc. 41, 232-3 (1982)*

199
Kocher, D.C. "On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment," *pp 669-79, Environmental Migration of Long-Lived Radionuclides, Proc. Int. Symp., Knoxville, TN, July 27-31,1981, IAEA, 1982, SM-257*

200
Kocher, D.C.; Cotter, S.J.; Chester, R.O.; Comella, P.A.; Costanzi, F.A. "Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste," *Proc. Symp. on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste, Gatlinburg, TN March 9-13, 1981*

201
Kocher, D.C.; Leggett, R.W.; Dunning, D.E., Jr.; Ryan, M.T.; Eckerman, K.F. "Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects," *pp 279-90, Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste, Proc. Symp., Gatlinburg, TN, Mar.9-13,1981, ORNL, 1982, CONF-810372*

202
Kocher, D.C.; Sjoreen, A.L.; Bard, C.S.; Olsen, C.R. "Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste," *Proc. Waste Management, 1982, P.S. Post and M.E. Wech, Eds., pp. 197-208 (1982)*

203
Kopp, M.K.; Valentine, K.H.; Christophorou, L.G.; Carter, J.G. "New Gas Mixture Improves Performance of 3He Neutron Counters," *Nucl. Instrum. Methods (in press)*

204
Kouroukla, G.A.; Siomos, K.; Christophorou, L.G. "Photoionization of Fluoranthene in Dielectric Liquids," *Chem. Phys. Lett. 88, 572-5 (1982)*

205
Kouroukla, G.A.; Siomos, K.; Christophorou, L.G. "Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution," *J. Mol. Spectrosc. 92, 127-40 (1982)*

206
Kramer, S.D.; Lehmann, B.E.; Hurst, G.S.; Payne, M.G.; Young, J.P. "The Reaction of Li with Oxygen in the Presence of He or Ar," *J. Chem. Phys. 76, 3614-22 (1982)*

207
Kremens, P.; Jadusliwer, B.; Bederson, B.; Stockdale, J.A.D. "Electric Dipole Polarizabilities of Alkali Halide Dimers," *301-7, Metal Bonding and Interactions in High Temperature Systems, James L. Gold and William C. Stwalley, Eds., ACS Symposium Series 179, (1982).*

208
Lagasse, L.D.; Pretorius, R.G.; Petrilli, E.S.; Ford, J.L.C., Jr.; Hoeschele, J.D.; Kean, C. "The Metabolism of Cis-Dichlorodiammineplatinum(II): Distribution ,Clearance, and Toxicity," *Am. J. Obstet. Gynecol. 139, 4 (1981)*

209
Leggett, R.W.; Crawford, D.J. "A Method for Projecting Age-Specific Mortality Rates for Certain Causes of Death," *Risk Anal. 1, 205-15 (1981)*

210
Leggett, R.W.; Crawford, D.J. "The Role of Age in Human Susceptibility to Radiation," *Science Progress (in press)*

211
Leggett, R.W.; Eckerman, K.F.; Williams, L.R. "Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling." *Health Phys. 43, 307-322 (1982)*

212
Leggett, R.W.; Williams, L.R. "A Reliability Index for Models," *Ecol. Modelling 13, 303-12 (1981)*

213
Leung, P.T.; Rustgi, M.L.; Turner, J.E. "Comparison of Bethe's Formula for Magentic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation," *Phys. Rev. A 25, 1775-6 (1982)*

214
Little, C.A.; Fields, D.E.; McDowell-Boyer, L.M.; Emerson, C.J. "The PRESTO Low-Level Waste Transport and Risk Assessment Code," *v.2, pp 643-55, The State of Waste Isolation in the U.S. and Elsewhere, Proc. Waste Management '81, Tucson, AZ, Feb.23-26,1981. Univ. of Ariz./Am. Nucl. Soc., 1981*

215
Little, C.A.; Miller, C.W. "Comparison of Observed and Predicted Air Concentrations for 18.6 um Fluorescein Particles," *Health Phys. 43, 355-62 (1982)*

216
Little, C.A.; Voorhees, L.D.; Reed, R.M. "Environmental Information Needed to License a Low-Level Waste Disposal Facility," *Proc. Symp. Low-Level Waste Disposal Site Characterization and Monitoring, Arlington, VA, June 16-17,1982 (in press)*

217
Little, J.W.; Ferrell, T.L.; Callcott, T.A.; Arakawa, E.T. "Radiative Decay of Surface Plasmons on Nonspherical Silver Particles," *Proc. Workshop on The Physics of Submicron Structures, Univ. of Illinois, Urbana, June 28-30, 1982*

218
Little, J.W.; Ferrell, T.L.; Callcott, T.A.; Arakawa, E.T. "Radiative Decay of Surface Plasmons on Nonspherical Silver Particles," *Proc. Workshop Physics of Submicron Structures, Urbana, IL, June 28-30,1982 (in press)*

219
Little, J.W.; Ferrell, T.L.; Callcott, T.A.; Arakawa, E.T. "Radiative Decay of Surface Plasmons on Oblate Spheroids," *Phys. Rev. B 26, (1982)*

220
Manson, J.R.; Ritchie, R.H. "Self Energy of a Charge near a Surface," *Phys. Rev. B 24, 4867-70 (1981)*

221
Matthews, T.G. "Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments," *Am. Ind. Hyg. Assoc. J. 43, 547-552 (1982)*

222
Matthews, T.G. "Multiple-Reflection Raman Gas Cell Design," *Appl. Opt. 21, 577-9 (1982)*

223
Matthews, T.G.; Hawthorne, A.R.; Howell, T.C.; Metcalfe, C.E.; Gammage, R.B. "Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environment," *Environ. Int. (in press)*

224
Matthews, T.G.; Hawthorne, A.R.; Howell, T.C.; Metcalfe, C.E.; Gammage, R.B. "Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments," *Environment International (in press)*

225
Matthews, T.G.; Hawthorne, A.R.; Schrimsher, J.M.; Corey, M.D.; Daffron, C.R. "Formaldehyde Surface Emission Monitor," *Proc. Natl. Symp. Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources, Raleigh, NC, May 4-7,1982 (in press)*

226
Matthews, T.G.; Howell, T.C. "Formaldehyde Emission from Pressed Wood Products," *Proc. of Pittsburg Conf./Expo. Analytical Chemistry and Applied Spectroscopy, Atlantic City, NJ, March 8-13, 1982*

227
Matthews, T.G.; Howell, T.C. "Solid Sorbent for Formaldehyde Monitoring," *Anal. Chem. 54, 1495-8 (1982)*

228
Matthews, T.G.; Howell, T.C. "Visual Colorimetric Formaldehyde Screening Analysis for Indoor Air," *Air Pollut. Control Assoc. J. 31, 1181-4 (1981)*

229
Mazarro, A.; Echenique, P.M.; Ritchie, R.H. "The Charged Particle Wake in the Random Phase Approximation," *Physical Rev. B (in press)*

230
McCorkle, D.L.; Christophorou, L.G.; Hunter, S.R. "Electron Attachment Rate Constants and Cross Sections for Halocarbons," *pp. 21-34, Electron and Ion Swarms (L. G. Christophorou, Ed.), Pergamon Press, New York (1981)*

231
McDowell-Boyer, L.M.; Baes, C.F., III "Terrestrial Food Chain Transport," *Models and Parameters for Environmental Radiological Assessments, (C. W. Miller, ed.), DOE/TIC-11468 (in press).*

232
Meyer, H.R. "Radiological Assessment of an Alternative Breeder Reactor Fuel Cycle," *Proc. Symp. Intermediate Range Atmospheric Transport Processes and Technology Assessment, Oct. 13,1980, Gatlinburg, TN, 1981*

233
Meyer, H.R.; Holton, G.A. "Modeling the Potential Public Health Impacts of Airborne Releases," *Proc. Workshop, BNl, Aug.17-18,1982 (in press)*

234
Miller, C.W. "Comparison of Methods for Predicting Air Concentrations near Reactor Complexes," *Trans. Am. Nucl. Soc. 39, 125-6 (1981)*

235
Miller, C.W. "Introduction to the Symposium," *pp 5-7, Intermediate Range Atmospheric Transport Processes and Technology Assessment, Proc. Symp., Gatlinburg, TN, Oct.1-3,1980, CONF-801064, 1981*

236
Miller, C.W. "Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters," *Trans. Am. Nucl. Soc. 41, 74-5 (1982)*

237
Miller, C.W.; Fields, D.E.; Wiseman, P.J. "Comparison of Observed and Predicted Sodium Air and Ground Concentrations," *Proc. of Am. Nucl. Soc. Winter Meet., Washington, DC, November 14-19, 1982*

238
Miller, C.W.; Hermann, O.W. "ANEMOS: A Code to Calculate Radionuclide Concentrations in Air," *Trans. Am. Nucl. Soc. 38, 97-8 (1981)*

239
Miller, C.W.; Little, C.A. "Uncertainty Estimates for Predictions of the Impact of Breeder Reactor Radionuclide Releases," *Proc. of Int. Top. Meet. Liquid Metal Fast Breeder Reactor Safety and Related Design and Operational Aspects, Lyon-Ecully, France, July 19-23, 1982 (in press)*

240
Miller, J.C.; Compton, R.N. "Multiphoton Ionization of Iodine and Benzene: Photoelectron and Ion Kinetic Energy Distributions," *J. Chem. Phys. 75, 2020–1 (1981)*

241
Miller, J.C.; Compton, R.N. "Multiphoton Ionization Photoelectron Spectroscopy of Nitric Oxide," *J. Chem. Phys. 75, 22–9 (1981)*

242
Miller, J.C.; Compton, R.N. "Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide," *Chem. Phys. Lett. (in press).*

243
Miller, J.C.; Compton, R.N. "Third-Harmonic Generation and Multiphoton Ionization in Rare Gases," *Phys. Rev. A 25, 2056–63 (1982)*

244
Miller, J.C.; Compton, R.N.; Carney, T.E.; Baer, T. "Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization," *J. Chem. Phys. 76, 5648–9 (1982)*

245
Miller, J.C.; Compton, R.N.; Cooper, C.D. "Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases," *J. Chem. Phys. 76, 3967–73 (1982)*

246
Myrick, T.E.; Berven, B.A.; Haywood, F.F. "Determination of Concentrations of Selected Radionuclides in Surface Soil Rates in the United States," *Health Phys. (in press).*

247
Niyogi, S.K.; Feldman, R.P. "Effect of Several Metal Ions on Misincorporation During Transcription," *Nucl. Acids Res. 9, 2615 (1981)*

248
Niyogi, S.K.; Feldman, R.P.; Hoffman, D.J. "Selective Effects of Metal Ions on RNA Synthesis Rates," *Toxicol. 22, 9 (1981)*

249
O'Brien, D.H.; Deree, N.; Grigsby, R.A.; Irgolic, K.J.; Knapp, F.F., Jr. "Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides," *Organometallics (1), 513, (1982)*

250
O'Donnell, F.R. "The Condos Methodology for Evaluation of Radiation Exposure from Consumer Products," *pp 280–7, Radiation Control, Proc. 11th Natl. Conf., Oklahoma City, May 6–10,1979, FDA 81–8054, 1981*

251
O'Neill, R.V.; Gardner, R.H.; Hoffman, F.O.; Schwarz, G. "Parameter Uncertainty and Estimated Radiological Dose to Man from Atmospheric I-131 Releases: A Monte Carlo Approach," *Health Phys. 40, 760–4 (1981)*

252
Okada, R.D.; Knapp, F.F., Jr.; Elmaleh, D.R.; Pohost, G.M.; Yasuda, T.; Leppo, J.; Boucher, C.A.; Strauss, H.W. "Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A New Potential Cardiac Imaging Agent," *Circulation 65, 305 (1982)*

253
Owens, M.E.; Berven, B.A.; Perdue, P.T. "Measurement of Kr-85 Concentrations in Air Using a Cryogenic Sampling Technique," *Trans. Am. Nucl. Soc. 39, 111–3 (1981)*

254
Pace, M.O. (Chairman); Aschwanden, T.; Bancom, K.B.; Farish, O.; Honda, M.; Pfeiffer, W.; Wootton, R.E. "Forum II: Requirements for Insulating Gases," *pp. 552-560, Gaseous Dielectrics III (L. G. Christophorou, Ed.), Pergamon Press, New York, March 7-11, 1982*

255
Pace, M.O.; Adcock, J.L.; Frees, L.C.; Christophorou, L.G. "Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles," *pp 307-14, Gaseous Dielectrics III, Proc. 3rd Int. Symp., Knoxville, TN, Mar.7-11,1982, Pergamon Press, 1982*

256
Pace, M.O.; Adcock, J.L.; Frees, L.C.; Christophorou, L.G. "Feasibility Studies for Improving Gas Insulation by Coating Contaminating Particles," *pp. 307-313, Gaseous Dielectrics III (L. G. Christophorou, Ed.), Pergamon Press, New York, March 7-11, 1982*

257
Pace, M.O.; Chan, C.C.; Christophorou, L.G. "Ternary Gas Mixtures for High Voltage Industrial Insulation," *pp 285-9, Electrical Insulation, Proc. Conf., Chicago, Oct.19-22,1981, Inst. Electr. Electron. Eng., 1981*

258
Payne, M.G.; Chen, C.H.; Hurst, G.S.; Foltz, G.W. "Applications of Resonance Ionization Spectroscopy in Atomic and Molecular Physics," *v.17, pp 229-74, Advances in Atomic and Molecular Physics, Academic Press, 1981*

259
Payne, M.G.; Garrett, W.R. "Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance," *Phys. Rev. A 26, 356-71 (1982)*

260
Payne, M.G.; Hurst, G.S. "One-Atom Detection and Statistical Studies with Resonance Ionization Spectroscopy (Lecture 2)," *Proc. Int. School of Quantum Electronics, Erice, Italy, Sept.23-Oct.3,1982 (in press)*

261
Payne, M.G.; Hurst, G.S. "One-Atom Detection and Statistical Studies with Resonance Ionization Spectroscopy," *Proceedings of the International School of Quantum Electronics - Analytical Laser Spectroscopy, NATO ASI Series No. 82/33, Plenum Publishing Corporation (accepted)*

262
Payne, M.G.; Hurst, G.S. "Theory of Resonance Ionization Spectroscopy," *Proceedings of the International School of Quantum Electronics - Analytical Laser Spectroscopy, NATO ASI Series No. 82/33, Plenum Publishing Corporation (accepted)*

263
Payne, M.G.; Hurst, G.S. "Theory of Resonance Ionization Spectroscopy (Lecture 1)," *Proc. Int. School of Quantum Electronics, Erice, Italy, Sept.23-Oct.3,1982 (in press)*

264
Payne, M.G.; Hurst, G.S. "Weak Interaction Studies Using Resonance Ionization Spectroscopy," *Proceedings of the International School of Quantum Electronics - Analytical Laser Spectroscopy, NATO ASI Series No. 82/33, Plenum Publishing Corporation (accepted)*

265
Payne, M.G.; Hurst, G.S. "Weak Interaction Studies Using Resonance Ionization Spectroscopy (Lecture 3)," *Proc. Int. School of Quantum Electronics, Erice, Italy, Sept.23-Oct.3,1982 (in press)*

266
Phillips, J.E.; Easterly, C.E. "Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream," *Rev. Sci. Instrum. 53, 112-4 (1982)*

267
Pindzola, M.S.; Payne, M.G.; Garrett, W.R. "Two-Photon Excitation of Xenon," *Phys. Rev. A 24, 3115-9 (1981)*

268
Pleasant, J.C.; McDowell-Boyer, L.M.; Killough, G.G. "RAGTIME: A Time-Dependent Model for Radionuclides in Agricultural Systems," *pp 136-7, Environmetrics '81, Summ. of Conf. Proc., Washington, DC, Apr.8-10,1981, EPA, 1981*

269
Post, W.M.; Travis, C.C. "Global Stability in Ecological Models with Continuous Time Delays," *pp 241-50, Integral and Functional Differential Equations, Marcel Dekker, Inc., New York, 1981*

270
Pretorius, R.G.; Petrilli, E.S.; Kean, C.; Ford, J.L.C., Jr.; Hoeschele, J.D.; Lagasse, L.D. "Comparison of the Iv and Ip Routes of Administration of Cisplatin in Dogs," *Cancer Treatment Reports 65, 1055-62 (1981)*

271
Ritchie, R.H. "Collective Aspects of Charged Particle Track Structure in Nonmetallic Solids," *Proceedings of the Eighth Symposium on Microdosimetry, Julich, Germany, Sept. 27-Oct. 1, 1982 (in press)*

272
Ritchie, R.H. "Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter," *Nucl. Instrum. Methods (198), 81, (1982)*

273
Ritchie, R.H. "Rotational Excitation of Molecules by Slow Neutrons," *Phys. Rev. A 24, 3032-7 (1981)*

274
Ritchie, R.H. "Spatial Resolution of Energy Loss Measurements in Electron Microscopy. I. Broad-Beam Geometry," *Philos. Mag. A44, 931-43 (1981)*

275
Ritchie, R.H. "Summary Discussions," *Proceedings of the U.S.-Japan Seminar on Charged Particle Penetration Phenomena, Charge States and Dynamic Screening of Swift Ions in Solids, Honolulu, Hawaii, January 25-29, 1982 (in press)*

276
Ritchie, R.H. "The Stopping Power of an Electron Gas for Slow Ions," *Proceedings of the U.S.-Japan Seminar on Charged Particle Penetration Phenomena, Charge States and Dynamic Screening of Swift Ions in Solids, Honolulu, Hawaii, January 25-29, 1982 (in press)*

277
Ritchie, R.H. "Theory of Laser-Induced Electron Transport through Molecular Gases," *Phys. Rev. A 24, 950-4 (1981)*

278
Ritchie, R.H.; Ashley, J.C. "Energy Losses to Surface Plasmons by Charged Particles," *Proceedings of the U.S.-Japan Seminar on Charged Particle Penetration Phenomena, Charge States and Dynamic Screening of Swift Ions in Solids, Honolulu, Hawaii, Jan. 25-29, 1982 (in press)*

279
Ritchie, R.H.; Ashley, J.C.; Ferrell, T.L. "The Interaction of Photons with Surface Plasmons," *Electromagnetic Surface Modes (A. D. Boardman, ed.), John Wiley, New York, (1982)*

280
Ritchie, R.H.; Claussen, C. "A Core Plasma Model of Charged Particle Track Formation in Insulators," *Nucl. Instrum. Methods 198, 133–8 (1982)*

281
Ritchie, R.H.; Claussen, C. "Charged Particle Track Structure in Insulators," *Proceedings of U.S.–Japan Seminar on Charged Particle Penetration Phenomena, Charge States and Dynamic Screening of Swift Ions in Solids, Honolulu, Hawaii, Jan. 25–29, 1982 (in press)*

282
Ritchie, R.H.; Echenique, P.M. "Quantum Theory of the Charged Particle Wake," *Ann. Israeli Phys. Soc. 4, 245–53 (1981)*

283
Ritchie, R.H.; Echenique, P.M. "The Wake of Charged Particles in Condensed Matter," *Philos. Mag. 45, 347 (1982)*

284
Ritchie, R.H.; Ferrell, T.L. "Many-Body Assemblies – A Quantum Trail to the Electron Mass," *Interscience Division, John Wiley & Sons, (in press)*

285
Ritchie, R.H.; Ferrell, T.L. "Plasmons and Surfaces," *Am. Sci. (submitted)*

286
Ritchie, R.H.; Pindzola, M.S.; Garrett, W.R. "Use of Local Exchange Potential in the Calculation of Photoionization and Electron–Ion Scattering," *Phys. Rev. A 23, 2905–2913 (1981)*

287
Rustgi, M.L.; Leung, P.T.; Turner, J.E.; Brandt, W. "Massive Neutrinos and the Stellar Stopping Power via the Nutrino Magnetic Moment," *Phys. Rev. A 24, 2425–30 (1981)*

288
Rustgi, M.L.; Vyas, R.; Turner, J.E. "Contribution of the Structure to the Stopping Power of Matter for Deuterons at Extreme Relativistic Energies," *Phys. Rev. A 23, 2293–6 (1981)*

289
Ryan, M.T.; Fair, M.F. "The Radiation Warning Symbol," *Health Phys. 41, 416–7 (1981)*

290
Saenger, W.; Betzel, C.; Hingerty, B.E.; Brown, G.M. "Flip–Flop Hydrogen Bonding in a Partially Disordered System," *Nature 296, 581 (1982)*

291
Salib, S.; Rustgi, M.L. "Absorption of RF and Microwaves on Spherical Multilayer Biological Systems," *Health Phys. 42, 165–77 (1982)*

292
Santella, R.M.; Grunberger, D.; Broyde, S.; Hingerty, B.E. "Z-DNA Conformation of N-2-Acetylaminofluorene Modified Poly (dG-dC). Poly(dG-dC) Determined by Reactivity with Anti Cytidine Antibodies and Minimized Potential Energy Calculations," *Nucl. Acids Res. 9, 5459 (1981)*

293
Sauers, I.; Christophorou, L.G. "Spark Decomposition Studies of Dielectric Gas Mixtures," *Inst. Electr. Electron. Eng. Publication (in press)*

294
Sauers, I.; Ellis, H.W.; Frees, L.C.; Christophorou, L.G. "Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride," *Inst. Electr. Electron. Eng. Trans. Electr. Insul. EI-17, 284–6 (1982)*

295
Sauers, I.; Ellis, H.W.; Frees, L.C.; Christophorou, L.G. "Studies of Spark Decomposition Products of SF6 and SF6/Perfluorocarbon Mixtures," *pp. 387-399, Gaseous Dielectrics III (L. G. Christophorou, Ed.), Pergamon Press, New York, March 7-11, 1982*

296
Shaeffer, D.L. "A Two-Compartment Model for Transport of Iodine-131 Via the Pasture-Cow-Milk Pathway," *Health Phys. 41, 155-64 (1981)*

297
Sharp, R.D.; Bees, C.F., III "Simulation of Radionuclide Transport in U.S. Agriculture," *Proc. 1982 Summer Computer Simulation Conference, pp. 253-7, July 19-21, 1982, Simulation Councils, Inc., Denver, CO.*

298
Shenton, L.R. "A Reinforcement Depletion Urn Problem - I. Basic Theory," *Bull. Math. Biol. 43, 327-40 (1981)*

299
Sims, C.S. "Validity of Quality Factor Measurement Techniques: A Reply to Wagner's Comments," *Health Phys. 40, 570 (1981)*

300
Sims, C.S.; Gilley, L.W. "Nuclear Engineering Training Using the Health Physics Research Reactor," *Trans. Am. Nucl. Soc. 39, 57-8 (1981)*

301
Sims, C.S.; Killough, G.G. "Neutron Fluence to Dose Conversion Factors for the Health Physics Research Reactor," *Radiat. Prot. Dosim. 1, 133-4 (1981)*

302
Sims, C.S.; Patterson, Jr., G.R. "Reference Dosimetry for the Health Physics Research Reactor," *Health Phys. (in press)*

303
Sims, C.S.; Swaja, R.E. "Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980)," *Health Phys. 42, 3-18 (1982)*

304
Siomos, K.; Christophorou, L.G. "Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique," *Proc. of 7th Int. Conf. Conduction and Breakdown in Dielectric Liquids, West Berlin, July 27-31, 1981*

305
Siomos, K.; Kourouklis, G.A.; Christophorou, L.G. "Electron Attachment as a Probe of Photoionization Processes in Liquid Media," *Proc. of 2nd Int. Swarm Seminar, ORNL, July 22-23, 1981, pp. 139-45*

306
Siomos, K.; Kourouklis, G.A.; Christophorou, L.G. "Laser Two-Photon Ionization of Organic Molecules in Dielectric Liquids," *Chem. Phys. Lett. 80, 504-11 (1981)*

307
Siomos, K.; Kourouklis, G.A.; Christophorou, L.G.; Carter, J.G. "Response to Comment on Photoionization of Fluorescent Organic Molecules in Liquid Media," *Radiat. Phys. Chem. 17, 185-6 (1981)*

308
Smith, D.H.; Bouldin, D.W.; Christophorou, L.G. "DC Dielectric Strengths of Fluorinated Benzenes and the Stored Energy Theory," *Proc. 7th Int. Conf. Conduction and Breakdown in Dielectric Liquids, Berlin, W. Germany, July 27-31, 1981*

309
Spyrou, S.M.; Sauers, I.; Christophorou, L.G. "Fragmentation of Saturated Perfluorocarbon Gas Dielectrics under Low Energy Electron Impact," *Inst. Electr. Electron Eng. Publication (in press)*

310
Stockdale, J.A.D.; Annis, B.K. "Internal Excitation of Uranium Hexafluoride Ions and Molybdenum Hexafluoride Ions in Collisions with Argon Atoms," *Chem. Phys. Lett. 82, 451-4 (1981)*

311
Sung, C.C.; Ritchie, R.H. "The Energy-Loss Spectra of Fast Charged Particles Passing Through a Thin Metallic Film," *J. Phys. C. 14, 2409 (1981)*

312
Swaja, R.E.; Greene, R.T. "Neutron and Gamma Attenuation Characteristics of Various Shields during Nuclear Criticality Accidents," *Trans. Am. Nucl. Soc. 39, 521-2 (1981)*

313
Swaja, R.E.; Sims, C.S. "Performance of Neutron and Gamma Personnel Dosimetry in Mixed Radiation Fields," *Proc. Annu. Meet. Aust. Radiat. Prot. Soc., Sydney, Australia, Aug. 24-27, 1981*

314
Swaja, R.E.; Sims, C.S. "Performance of Neutron and Gamma Personnel Dosimetry in Mixed Radiation Fields," *Proc. Int. Symp. Application of the Dose Limitation System, Madrid, Spain, Oct. 19-23, 1981, IAEA-SM-256, pp. 88-9, 1981*

315
Swaja, R.E.; Sims, C.S. "Performance of Nuclear Criticality Accident Dosimetry Systems," *Trans. Am. Nucl. Soc. 38, 586 (1981)*

316
Tan, E.L.; Williams, M.W.; Schenley, R.L.; Perdue, S.W.; Hayden, T.L.; Turner, J.E.; Hsie, A.W. "Metal Toxicity in CHO Cells: A Comparison with Mice and Drosophila," *Toxicol. Appl. Pharmacol. and Applied Pharmacology (submitted)*

317
Todd, P.J.; Warnack, R.J. "Calculated Angular Distributions of Fragment Ions from Polyatomic Ion Collisions," *Proc. of 30th Annual. Conf. Mass Spectrometry and Allied Topics, Honolulu, Hawaii, June 6-11, 1982, pp. 748-9 (1982)*

318
Todo, A.S.; Hiromoto, G.; Turner, J.E.; Wright, H.A.; Hamm, R.N.; Rustgi, M.L. "Monte Carlo Calculations of Initial Energies of Electrons Produced in Water by Photons with Energies up to 1 GeV," *Health Phys. (in press)*

319
Todo, A.S.; Turner, J.E.; Hamm, R.N.; Wright, H.A. "Calculated Initial Energies of Electrons in Si and SiO2 Irradiated by Photons with Energies up to 2 MeV," *Nucl. Instrum. Methods (in press)*

320
Travis, C.C. "Differentiability of Weak Solutions to an Abstract Inhomogeneous Differential Equation," *Proc. Am. Math. Soc. 82, 425-30 (1981)*

321
Travis, C.C. "Regularity of Solutions to an Inhomogeneous Differential Equation in Banach Space," *pp 259-67, Integral and Functional Differential Equations, Marcel Dekker, 1981*

322
Travis, C.C.; Etnier, E.L. "A Survey of Adsorption Relationships for Reactive Solutes in Soil," *J. Environ. Qual. 10, 8-17 (1981)*

323
Travis, C.C.; Etnier, E.L. "Dietary Intake of Cadmium in the United States: 1920–1975," *Environ. Res. 27, 1–9 (1982)*

324
Travis, C.C; Etnier, E.L. "Health Risks of Energy Technologies," *Am. Assoc. Adv. Sci. Symp. Volume Series, Westview Press, Boulder, CO (1982)*

325
Travis, C.C.; Haddock, G. "On Structural Identification," *Math. Biosci. 56, 157–73 (1981)*

326
Travis, C.C.; Hoffman, F.O. "Aspects of Uncertainty Analysis in Accident Consequence Modeling," *Trans. Am. Nucl. Soc. 38, 91–2 (1981)*

327
Travis, C.C.; Meyer, H.R.; Etnier, E.L. "Health and Safety Impacts of Residential Wood Heat," *Trans. Am. Nucl. Soc. 41, 49–50 (1982)*

328
Travis, C.C.; Watson, A.P.; McDowell-Boyer, L.M.; Cotter, S.J.; Randolph, M.L.; Fields, D.E. "Natural and Technologically Enhanced Sources of Radon," *Trans. Am. Nucl. Soc. 39, 80–1 (1981)*

329
Travis, C.C.; Yoshida, N. "Oscillation Criteria for Nonlinear Bianchi Equations," *Nonlinear Anal. Theory Appl. 6, 625–36 (1982)*

330
Turner, J.E. "If you don't study, the odds are still 4x10 –35:1 that you can pass Part I of the ABHP certification exam!," *Health Phys. (Letter to the Editor, in press)*

331
Turner, J.E. "Review of Handling Radioactivity by D. C. Stewart," *Nucl. Sci. Eng. 79, 246 (1981)*

332
Turner, J.E.; Lee, E.H.; Jacobson, K.B.; Christie, N.T.; Williams, M.W.; Hoeschele, J.D. "Investigation of Correlations between Chemical Parameters of Metal Ions and Acute Toxicity in Mice and Drosophila," *The Science of the Total Environment (in press)*

333
Turner, J.E.; Magee, J.L.; Hamm, R.N.; Chatterjee, A.; Wright, H.A.; Ritchie, R.H. "Early Events in Irradiated Water," *Proceedings of the Seventh Symposium on Microdosimetry, Oxford, England, Sept. 8–12, 1980, Vol. 1, pp. 507–17 (1981)*

334
Turner, J.E.; Magee, J.L.; Hamm, R.N.; Chatterjee, A.; Wright, H.A.; Ritchie, R.H. "Early Events in Irradiated Water," *Rad. Res. (submitted)*

335
Turner, J.E.; Paretzke, H.G.; Hamm, R.N.; Wright, H.A.; Ritchie, R.H. "Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases," *Radiat. Res. 92, 47–60 (1982)*

336
Vo-Dinh, T. "A Personnel or Area Dosimeter for Polynuclear Aromatic Vapors," *Proc. Natl. Symp. Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources, Raleigh, NC, May 4–7,1982 (in press)*

337
Vo-Dinh, T. "Air Pollution: The Application of Simple Luminescence Techniques," *Proc. of Symposium on Identification and Analysis of Organic Pollutants in Air, Kansas City, Missouri, 1982*

338
Vo-Dinh, T. "Luminescence Spectrometry," *v.1, pp 47-80, Analytical Measurements and Instrumentation for Process and Pollution Control, Ann Arbor Science, Ann Arbor, MI, 1981*

339
Vo-Dinh, T. "Quantification of Surface Contamination: Principles and Applications," *pp 206-10, Proc. 28th Annu. Tech. Meet. Inst. of Environmental Sciences, Atlanta, Apr.21-23,1982, Inst. of Environmental Sciences, 1982*

340
Vo-Dinh, T. "Quantification of Surface Contamination: Principle and Applications," *Proceedings of 1982 Annual Meeting of the Inst. of Enviromental Sciences, Atlanta, GA, April 21-23 (1981)*

341
Vo-Dinh, T. "Rapid Screening Luminescence Techniques for Trace Organic Analysis," *Am. Soc. Test. Mater. Book Series, Proc. Symp. New Directions in Molecular Luminescence, Pittsburgh Conf., Atlantic City, NJ, Mar.8-12,1982 (in press)*

342
Vo-Dinh, T. "Simple Luminescence Techniques Simplify Air Analysis," *Instrum. Technol. 5, 45-8 (1981)*

343
Vo-Dinh, T. "Synchronous Excitation Spectroscopy," *v.4, pp 167-92, Modern Fluorescence Spectroscopy, Plenum Publ. Corp., 1981*

344
Vo-Dinh, T. "Synchronous Luminescence Spectroscopy: Methodology and Applicability," *Appl. Spectrosc. 36, 576-81 (1982)*

345
Vo-Dinh, T. "Synchronous Luminescence Spectroscopy: Methodology and Applicability," *Appl. Spectros. 36, 576-581 (1982)*

346
Vo-Dinh, T.; Gammage, R.B. "The Lightpipe Luminoscope for Monitoring Occupational Skin Contamination," *J. Am. Ind. Hyg. Assoc. 42, 112-120 (1981)*

347
Vo-Dinh, T.; Gammage, R.B. "The Use of a Fiber-Optics Skin Contamination Monitor in the Workplace," *pp 269-81, Chemical Hazards in the Workplace - Measurement and Control, Am. Chem. Soc. Symp. Series No. 149, 1981*

348
Vo-Dinh, T.; Gammage, R.B.; Martinez, P.R. "Analysis of a Workplace Air Particulate Sample," *Anal. Chem. 53, 253-8 (1981)*

349
Vo-Dinh, T.; Gammage, R.B.; Martinez, P.R. "Analysis of a Workplace Di Particulate Sample by Synchronous Luminescence and Room Temperature Phosphorescence," *Anal. Chem. 53, 173-258 (1981)*

350
Vo-Dinh, T.; Martinez, P.R. "Direct Determination of Selected Polynuclear Aromatic Hydrocarbons in a Coal Liquefaction Product by Synchronous Luminescence Techniques," *Anal. Chim. Acta 125, 13-19 (1981)*

351
Walsh, P.J.; Etnier, E.L.; Watson, A.P. "Health and Safety Implications of Alternative Energy Technologies. 3. Fossil Energy," *Environ. Manage. 5, 483-94 (1981)*

352
Walsh, P.J.; Jones, T.D.; Griffin, G.D.; Dudney, C.S.; Calle, E.E.; Easterly, C.E. "Risk Assessment Approaches: General Definitions, Limitations and Research Needs," *J. Environ. Sci. Health A17, 541-52 (1982)*

353
Warmack, R.J.; Mueller, T.R. "A Scheme for Serial Communications Among Small Computers," *Chem., Biomed., and Environ. Instrumentation 11, 281-8 (1981)*

354
Washburn, L.C.; Sun, T.T.; Byrd, B.L.; Callahan, A.P. "Production of L-[1-11C]Valine by HPLC Resolution," *J. Nucl. Med. 23, 33 (1982)*

355
Watson, A.P. "Definitions, Sources, and Rates of Exposure to Ionizing Radiation," *Presentation of Radiation Forum Series, Sponsored by Florida Institute of Phosphate Research, Bartow Civic Center, Bartow, Florida, February 18, 1982*

356
Watson, A.P. "Energy Analysis of Human Ecosystems in an Appalachian Coal County," *Human Ecol. (in press)*

357
Watson, A.P. "Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County," *pp 143-55, Health Impacts of Different Sources of Energy, Nashville, TN, June 22-26,1981, IAEA, Vienna, 1982, SM-254*

358
Watson, A.P. "Executive Summary," *Health and Environmental Effects Document on Coal Liquefaction - 1982 (in review)*

359
Watson, A.P. "Health and Safety Regulatory Issues Panel," *Moonshine to Motor Fuel, A Workshop on Regulatory Compliance for Fuel Alcohol Production, pp. 243-96, CONF-810303 (October 1981)*

360
Watson, A.P.; Etnier, E.L. "Health and Safety Implications of Alternative Energy Technologies. 1. Geothermal and Biomass," *Environ. Manage. 5, 313-27 (1981)*

361
Watson, A.P.; Etnier, E.L.; Walsh, P.J. "Health Implications of Unconventional Energy Production and Use," *Proc. 3rd Miami International Conference on Alternative Energy Sources, December 15-17, 1980, Miami Beach, Florida (in press)*

362
Watson, A.P.; Matthiessen, J.N.; Springett, B.P. "Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (Drosera erythrorhiza Lindl)," *Aust. J. Ecol. 7, 13-22 (1982)*

363
Watson, A.P.; White, C.L. "Workplace Injury Experience of Female Coal Miners in the United States," *Amer. J. Indust. Med. (submitted)*

364
Watson, E.E.; Cristy, M. "A Model of the 3-month Pregnant Woman for Radiation Dose Estimation," *J. Nucl. Med. 23, 88 (1982)*

365
Wei, C.H.; Hingerty, B.E. "Structure of Sodium Methanesulfonate, NaCH3SO3," *Acta Crystallogr. B 37, 1992 (1981)*

366
Wei, C.H.; Jacobson, K.B. "X-Ray Crystallographic Characterization of an Adenine-Cadmium (II) Complex, Di-u-adeninium-di-u-aquo-tetrakis (nitrato-o,o')-dicadmium (ii) Dinitrate, Containing a Cationic Nucleic Acid Base as a Bidentate Ligand," *Inorg. Chem. 20, 356 (1981)*

367
White, C.W.; Naramoto, H.; Williams, J.M.; Narayan, J.; Appleton, B.R.; Wilson, S.R. "Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing," *pp 241-8, Laser and Electron-Beam Interactions with Solids, Elsevier Science Publ. Co., Inc., 1982*

368
Williams, L.R.; Leggett, R.W. "Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease," *SIAM J. Math. Anal. 13, 112-21 (1982)*

369
Williams, L.R.; Leggett, R.W. "Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions;" *SIAM. J. Math. Anal. 13, 122-33 (1982)*

370
Williams, L.R.; Leggett, R.W. "Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions," *SIAM J. Math. Anal. 13, 122-33 (1982)*

371
Williams, M.W.; Hoeschele, J.D.; Turner, J.E.; Jacobson, K.B.; Christie, N.T.; Paton, C.L.; Smith, L.H.; Witschi, H.R.; Lee, E.H. "Chemical Softness and Acute Metal Toxicity in Mice and Drosophila," *Toxicol. Appl. Pharmacol. 63, 461-9 (1982)*

372
Williams, M.W.; Turner, J.E. "Comments on Softness Parameters and Metal Ion Toxicity," *J. Inorg. Nucl. Chem. 43, 1689-91 (1981)*

373
Wright, H.A.; Hamm, R.N.; Turner, J.E. "Interface Effects on Dose Distributions in Irradiated Media," *Vol.1, pp. 294-302, Proceedings of the Seventh Symposium on Microdosimetry, Oxford, England, Sept. 8-12, 1980, EUR 7147 (1981)*

374
Yalcintas, M.G. "Measurement and Reduction of Dose in Diagnostic Computerized Tomography Scanning," *v.1, pp 281-95, Proc. Health Physics Midyear Symp., Hyannisport, MA, Dec.1980, Health Physics, 1981*

375
Yalcintas, M.G. (Ed.) "Proc. of Symposium on Low-Level Waste Disposal: Site Suitability Requirements," *Proc. of Symposium on Low-Level Waste Disposal, Site Suitability Requirements, Crystal City, Virginia, December 8-9, 1981*

376
Yalcintas, M.G.; Eckerman, K.F.; Warner, G.G. "Experimental Validation of Monte Carlo Calculations for Organ Dose," *v.1, pp 482-96, Proc. 3rd Radiopharmaceutical Dosimetry Symp., Oak Ridge, TN, Oct.1980, BRH, 1981*

REPORTS

377
Ab del Razek, M.M. "Investigation of Parameters Affecting the Concentration of Radon and Its Daughters in Indoor Atmospheres," *ORNL/TM-7726*

378
Becker, R.S. "An Investigation of Dissipative Forces near Macroscopic Media," *Univ. of Tennessee, Knoxville, Ph.D., August 1982*

379
Becker, R.S. "An Investigation of Dissipative Forces Near Macroscopic Media," *ORNL/TM-8506*

380
Begovich, C.L.; Eckerman, K.F.; Schlatter, E.C.; Ohr, S.Y.; Chester, R.O. "DARTAB: A Program to Combine Airborne Radionuclide Environmental Exposure Data with Dosimetric and Health Effects to Generate Tabulations of Predicted Health Impacts," *ORNL-5692*

381
Berger, C.D.; Lane, B.H.; Cotter, S.J.; Miller, C.W.; Glandon, S.R. "Population Dose Estimation from a Hypothetical Release of 2.4 Million Curies of Noble Gases and 10 Thousand Curies of I-131 at the Three Mile Island Nuclear Station, Unit 2," *ORNL/TM-7980*

382
Berry, W. Cataldo, A.; Chaney, R.; Etnier, E.L.; Ng, Y.; Palazzo, A.; Raper, D.; Wagner, G. "Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems," *BNL-51431*

383
Berven, B.A.; Dickson, H.W.; Goldsmith, W.A.; Johnson, W.M.; Cottrell, W.D.; Doane, R.W.; Haywood, F.F.; Ryan, M.T.; Shinpaugh, W.H. "Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey," *ORNL-5734*

384
Boyle, J.W.; Blumberg, R.; Cotter, S.J.; Hill, G.S.; Kerley, C.R.; Ketelle, R.H.; Kroodsma, R.L.; Lee, D.W.; Martin, R.C.; Roop, R.D.; Secora, D.N.; Staub, W.P.; Thoma, R.E. "Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site)," *ORNL-5870*

385
Calle, E.E. "Problems in the Estimation of Relative Risk Using Prevalence and Mortality Data," *Ohio State Univ., Columbus, Ph.D., August 1982*

386
Carnes, S.A.; Copenhaver, E.D.; Reed, J.H.; Soderstrom, E.J.; Sorensen, J.H.; Peelle, E.B.; Bjornstad, D.J. "Incentives and the Siting of Radioactive Waste Facilities," *ORNL-5880*

387
Carnes, S.A.; Copenhaver, E.D.; Reed, J.H.; Soderstrom, E.J.; Sorensen, J.H.; Peelle, E.B.; Bjornstad, D.J. "Incentives and the Siting of Radioactive Waste Facilities," *ORNL/FPO-81/146*

388
Chester, R.O.; Randolph, M.L. "Safeguard Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for September 1981," *ORNL/HASRD-141*

389
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Monthly Progress Report for December 1980," *ORNL/HASRD-107*

390
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Monthly Progress Report February 1-28, 1982," *ORNL/HASRD-150*

391
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for January 1981," *ORNL/HASRD-112*

392
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for February 1981," *ORNL/HASRD-117*

393
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report March 1981," *ORNL/HASRD-120*

394
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for April 1981," *ORNL/HASRD-125*

395
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for May 1981," *ORNL/HASRD-127*

396
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for June 1981," *ORNL/HASRD-130*

397
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for August 1981," *ORNL/HASRD-138*

398
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for October 1981," *ORNL/HASRD-143*

399
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for November 1981," *ORNL/HASRD-145*

400
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for December 1981," *ORNL/HASRD-146*

401
Chester, R.O.; Randolph, M.L. "Safeguards Analysis for Byproduct Materials and Small Quantities of SNM Technical Progress Report for January 1982," *ORNL/HASRD-148*

402
Chester, R.O.; Randolph, M.L. "Safeguards Analysis of Byproduct Materials and Small Quantities of SNM Technical Progress Report for July 1981," *ORNL/HASRD-134*

403
Chester, R.O.; Roberts, D.A. "Student Research Activities in the Technology Assessments Section of the Health and Safety Research Division Summer 1980," *ORNL-5720*

404
Chester, R.O.; Yalcintas, M.G.; Little, C.A. "Symposium on Site Suitability Characterization and Environmental Impact Statement for Low-Level Waste Regulation Technical Progress Report for July 1981," *ORNL/HASRD-133*

405
Chester, R.O.; Yalcintas, M.G.; Little, C.A. "Symposium on Site Suitability Characterization and Environmental Impact Statement for Low-Level Waste Regulation Technical Progress Report for June 1981," *ORNL/HASRD-132*

406
Christophorou, L.G. (Editor) "Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982," *ORNL/FPO-82/53*

407
Christophorou, L.G.; James, D.R.; Mathis, R.A.; Sauers, I.; Hunter, S.R.; Pace, M.O.; Bouldin, D.W.; Spyrou, S.M.; Fatheddin, A.; Lakdawala, V.K.; Adcock, J.L.; Easterly, C.E.; Griffin, G.D. "Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981-March 31, 1982," *ORNL/TM-8368*

408
Christophorou, L.G.; James, D.R.; Pai, R.Y.; Mathis, R.A.; Sauers, I.; Frees, L.C.; Hunter, S.R.; Pace, M.O.; Bouldin, D.W.; Spyrou, S.M.; Fatheddin, A.; Hanna, M.C. "High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981)," *ORNL/TM-8158*

409
Christophorou, L.G.; James, D.R.; Pai, R.Y.; Mathis, R.A.; Sauers, I.; Smith, D.H.; Frees, L.C.; Hunter, S.R.; Pace, M.O.; Bouldin, D.W.; Spyrou, S.M.; Fatheddin, A. "High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report, October 1, 1980-March 31, 1981," *ORNL/TM-7862*

410
Chu, Y.T. "The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder," *Univ. of Tennessee, Knoxville, Ph.D., March 1982*

411
Chu, Y.T. "The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder," *ORNL/TM-8451*

412
Cone, M.V.; Baldauf, M.F.; Opresko, D.M.; Uziel, M. "Chemicals Identified in Human Biological Media, A Data Base, Volume IV," *ORNL/EIS-163/V4*

413
Cottrell, W.D.; Berven, B.A.; Haywood, F.F. "Radiological Survey at Selected Locations in Niagara Falls, New York," *ORNL/CF-81/320*

414
Cottrell, W.D.; Haywood, F.F.; Witt, D.A.; Myrick, T.E.; Goldsmith, W.A.; Shinpaugh, W.H.; Loy, E.T. "Radiological Survey of the Shpack Landfill, Norton, Massachusetts," *ORNL-5799*

415
Cottrell, W.D.; Witt, D.A.; Shinpaugh, W.H.; Goldsmith, W.A.; Haywood, F.F. "Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts," *ORNL/TM-7934*

416
Crawford, D.J. "Radiological Risk of Actinon (219Rn)," *ORNL/TM-7977*

417
Dobson, J.E.; Cushman, R.M.; Walsh, P.J.; Samuels, G.A.; Vogt, D.P.; Mills, J.B.; Singh, S.P.N.; Dauzvardis, P.A.; Macal, C.M.; Kroodsma, R.L.; Ullrich, S.O., Jr.; Shepherd, A.D.; Freeman, L.M. "Environmental Implications of Small Fixed-Bed Gasifiers for Industry," *ORNL/TM-7361*

418
Dudney, C.S.; Hinkle, N.F.; Becker, J.M. "On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings," *ORNL/CONF-93*

419
Dudney, C.S.; Walsh, P.J. "Report of Ad Hoc Task Force on Indoor Air Pollution," *ORNL/TM-7679*

420
Dunning, D.E., Jr.; Killough, G.G.; Bernard, S.R.; Pleasant, J.C.; Walsh, P.J. "Estimates of Internal Dose Equivalent to 22 Target Organs for Radionuclides Occurring in Routine Releases from Nuclear Fuel-Cycle Facilities, Vol. III," *ORNL/NUREG/TM-190/V3*

421
Easterly, C.E. "Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment," *ORNL/TM-7860*

422
Easterly, C.E.; Dudney, C.S.; Griffin, G.D.; Walsh, P.J. "Health Effects of Dielectric Gases: Preliminary Report," *ORNL/TM-8353*

423
Eckerman, K.F.; Ford, M.R.; Watson, S.B. "Internal Dosimetry Data and Methods of ICRP - Part 2, Vol. 1: Committed Dose Equivalent and Secondary Limits," *ORNL/NUREG/TM-433*

424
Eddlemon, G.K.; Intemann, P.R.; Kanciruk, P.; Kroodsma, R.L.; Lee, D.W.; Meyer, H.R.; Schweitzer, M.; Sharples, F.E.; Staub, W.P.; Tolbert, V.R.; Triegel, E.K.; Voorhees, L.D.; Webb, J.W. "Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents," *ORNL/FPO-81/85*

425
Fields, D.E. "EPA Liquid Release Pathway Health Impact Code: Feasibility Study," *ORNL-5867*

426
Glandon, S.R.; Fields, D.E. "An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods," *ORNL-5813*

427
Glandon, S.R.; Fields, D.E. "MAGIC: A Digitization and Image Processing Program," *ORNL-5814*

428
Goldsmith, W.A.; Leggett, R.W.; Haywood, F.F.; Cottrell, W.D.; Crawford, D.J.; Ryan, M.T.; Perdue, P.T.; Owens, M.E.; Dickson, H.W.; Danek, J.L.; Anderson, D.L.; Burden, J.E.; Doane, R.W.; Ellis, B.S.; Hamilton, R.E.; Shinpaugh, W.H. "Radiological Survey of the Mallinckrodt Chemical Works, St. Louis, Missouri," *ORNL-5715*

429
Greene, R.T.; McFarland, E.W.; Dickson, H.W. "Dosimetry Report for the Sandia Irradiator for Dried Sewage Solids," *ORNL/TM-7637*

430
Griffin, G.D.; Schuresko, D.D. "Aryl Hydrocarbon Mono-Oxygenase Activity in Human Lymphocytes," *ORNL/TM-7721*

431
Hawthorne, A.R.; Gammage, R.B.; Matthews, T.G.; Blackman, G.S.; Howell, T.C.; Allen, R.J. "An Evaluation of Formaldehyde Emission Potential from Urea-Formaldehyde Foam Insulation: Panel Measurements and Modeling," *ORNL/TM-7959*

432
Haywood, F.F.; Dickson, H.W.; Cottrell, W.D.; Shinpaugh, W.H.; Burden, J.E.; Stone, D.P.; Doane, R.W.; Goldsmith, W.A. "Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan," *ORNL-5713*

433
Hoffman, F.O. "Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment," *Univ. of Tennessee, Knoxville, Ph.D., December 1981*

434
Hoffman, F.O. "Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment," *ORNL-5856*

435
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionucldies Released from Nuclear Power Reactors Technical Progress Report for September 1981," *ORNL/HASRD-142*

436
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for January 1981," *ORNL/HASRD-114*

437
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for February 1981," *ORNL/HASRD-116*

438
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for March 1981," *ORNL/HASRD-122*

439
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for April 1981," *ORNL/HASRD-126*

440
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for May 1981," *ORNL/HASRD-129*

441
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for June 1981," *ORNL/HASRD-131*

442
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for July 1981," *ORNL/HASRD-135*

443
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for August 1981," *ORNL/HASRD-140*

444
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for October 1981," *ORNL/HASRD-144*

445
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Technical Progress Report for December 1981," *ORNL/HASRD-147*

446
Hoffman, F.O. "Statistical Analysis of Dose Estimates Via Food Pathways for Radionuclides Released from Nuclear Power Reactors Monthly Progress Report for February 1982," *ORNL/HASRD-149*

447
Hoffman, F.O.; Gardner, R.H.; Eckerman, K.F. "Variability in Dose Estimates Associated with the Food Chain Transport and Ingestion of Selected Radionuclides," *ORNL/TM-8099*

448
Holoway, C.F.; Witherspoon, J.P.; Dickson, H.W.; Lantz, P.M.; Wright, T. "Monitoring for Compliance with Decommissioning Termination Survey Criteria," *ORNL/HASRD-95*

449
Holton, G.A. "Mathematical Properties of Ozone-Precursor Relationships in Photochemical Mechanisms," *Univ. of North Carolina, Chapel Hill, Ph.D., December 1981*

450
Holton, G.A.; Little, C.A.; O'Donnell, F.R.; Etnier, E.L.; Travis, C.C. "Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study," *ORNL/TM-8181*

451
Inhaber, H. "Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles," *ORNL/TM-7793*

452
Inhaber, H.; Chester, C.V.; Coghlan, W.A.; Crawford, D.J.; Ensminger, J.T.; Epler, J.L.; Flanagan, G.F.; Gant, K.S.; Gehrs, C.W.; Gift, E.H.; Gove, R.M.; Hildebrand, S.G.; Hoy, H.C.; Hsie, A.W.; Pfuderer, H.A.; Travis, C.C.; Uppuluri, V.R.R. "A Venture in Risk: Risk Studies at ORNL," *ORNL/TM-8103*

453
James, D.R. (Committee Member) "Electrical Safety Committee Review of the Fuel Recycle Division May 4, 1982," *ORNL/CF-82/215*

454
Kaye, S.V. "Health and Safety Research Division Long-Range Plan for the Period 1981-1986," *ORNL/FPO-81/47*

455
Kaye, S.V. "Health and Safety Research Division Progress Report for the Period October 1, 1979 - March 31, 1981," *ORNL-5750*

456
Kerr, G.D. "Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors," *ORNL/TM-8078*

457
Kerr, G.D. "Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton," *ORNL/TM-8318*

458
Killough, G.G. "Derivation of Dose Conversion Factors for Tritium," *ORNL-5853*

459
Knapp, F.F., Jr. "Nuclear Medicine Technology Progress Report for Quarter Ending December 31, 1981," *ORNL/TM-8186*

460
Knapp, F.F., Jr. "Nuclear Medicine Technology Progress Report for Quarter Ending December 31, 1980," *ORNL/TM-7685*

461
Knapp, F.F., Jr. "Nuclear Medicine Technology Progress Report for Quarter Ending June 30, 1981," *ORNL/TM-7918*

462
Knapp, F.F., Jr. "Nuclear Medicine Technology Progress Report for Quarter Ending March 31, 1981," *ORNL/TM-7775*

463
Knapp, F.F., Jr. "Nuclear Medicine Technology Progress Report for Quarter Ending September 30, 1981," *ORNL/TM-8123*

464
Knapp, F.F., Jr.; Ambrose, K.R.; Butler, T.A.; Goodman, M.M.; Hoeschele, J.D.; Srivastava, P.C. "Nuclear Medicine Progress Report for Quarter Ending June 30, 1982," *ORNL/TM-8428*

465
Knapp, F.F., Jr.; Ambrose, K.R.; Butler, T.A.; Goodman, M.M.; Hoeschele, J.D.; Srivastava, P.C. "Nuclear Medicine Progress Report for Quarter Ending March 31, 1982," *ORNL/TM-8363*

466
Kocher, D.C. "A Handbook of Decay Data for Application to Radiation Dosimetry and Radiological Assessments," *DOE/TIC-11026*

467
Kocher, D.C. "Dose-Rate Conversion Factors for External Exposure to Photons and Electrons," *ORNL/NUREG-79*

468
Kocher, D.C. "Radioactive Decay Data Tables," *ORNL/FPO-81/42*

469
Kocher, D.C.; Cotter, S.J.; Chester, R.O.; Comella, P.A.; Costanzi, F.A. "Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste," *CONF-810372*

470
Kocher, D.C.; McDowell-Boyer, L.M.; Ryan, M.T.; Killough, G.G. "Dosimetry and Biotransport Models to Implement ALARA Technical Progress Report for January-March, 1981," *ORNL/HASRD-118*

471
Little, C.A.; Fields, D.E.; Emerson, C.J.; Hiromoto, G. "Environmental Assessment Model for Shallow Land Disposal of Low-Level Radioactive Wastes: Interim Report," *ORNL/TM-7943*

472
Little, C.A.; Fields, D.E.; Hiromoto, G.; Emerson, C.J. "Environmental Assessment Model for the Shallow Land Disposal of Radioactive Waste Technical Progress Report for April 1981," *ORNL/HASRD-123*

473
Little, C.A.; Stratton, L.E. "Modeling and Low-Level Waste Management: An Interagency Workshop, Denver, CO, December 1-4, 1980," *ORNL/FPO-81/59*

474
Lotts, A.L.; Baylor, V.B.; Homan, F.J.; Kress, T.S.; Flanagan, G.F.; Fry, D.N.; Chester, R.O. "Monthly Highlights Report for July 1982 - ORNL Programs for the NRC Office of Nuclear Regulatory Research," *ORNL/FPO-82/108*

475
Lotts, A.L.; Baylor, V.B.; Homan, F.J.; Kress, T.S.; Flanagan, G.F.; Fry, D.N.; Chester, R.O. "Quarterly Management Report - ORNL Programs for the NRC Office of Nuclear Regulatory Research, Third Quarter," *ORNL/FPO-82/116*

476
Lotts, A.L.; Stevens, J.A.; Homan, F.J.; Kress, T.S.; Flanagan, G.F.; Fry, D.N.; Chester, R.O. "Monthly Highlights Report for December 1981 for ORNL Programs for the NRC Office of Nuclear Regulatory Research," *ORNL/FPO-82/8*

477
Lotts, A.L.; Stevens, J.A.; Homan, F.J.; Kress, T.S.; Flanagan, G.F.; Fry, D.N.; Chester, R.O. "Monthly Highlights Report for March 1982 for ORNL Programs for the NRC Office of Nuclear Regulatory Research," *ORNL/FPO-82/54*

478
Matthews, T.G.; Hawthorne, A.R.; Gammage, R.B. "Evaluation of a Second Derivative Uv-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes," *ORNL/TM-8007*

479
McDowell-Boyer, L.M.; Hetrick, D.M. "A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment," *ORNL/TM-8334*

480
Meyer, H.R.; Witherspoon, J.P.; McBride, J.P.; Frederick, E.J. "Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles," *ORNL/TM-7868*

481
Miller, C.W.; Cotter, S.J.; Hanna, S.R. "Proceedings of the Symposium on Intermediate Range Atmospheric Transport Processes and Technology Assessment," *CONF-801064*

482
Miller, C.W.; Hoffman, F.O.; Dunning, D.E., Jr. "A Comparison of the COMRADEX-IV and AIRDOS-EPA Methodologies for Estimating the Radiation Dose to Man from Radionuclide Releases to the Atmosphere," *ORNL/TM-6495*

483
Miller, C.W.; Little, C.A. "A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases," *ORNL-5832*

484
Murphy, B.D. "PHENIX - A Pseudo-Spectral Model of Long-Range Atmospheric Transport," *ORNL-5761*

485
Myrick, T.E.; Berven, B.A.; Haywood, F.F. "State Background Radiation Levels: Results of Measurements Taken During 1975-1979," *ORNL/TM-7343*

486
Myrick, T.E.; Blair, M.S.; Doane, R.W.; Goldsmith, W.A. "A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials," *ORNL/TM-8475*

487
Myrick, T.E.; Blair, M.S.; Doane, R.W.; Goldsmith, W.A. "A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with 226 Ra-Bearing Materials," *ORNL/TM-8475*

488
Myrick, T.E.; Goldsmith, W.A.; Berven, B.A.; Cottrell, W.D.; Haywood, F.F. "Procedures Manual for the ORNL Remedial Action Survey and Certification Activities (RASCA) Program," *ORNL/TM-8600*

489
Niemczyk, S.J.; McDowell-Boyer, L.M. "Interim Source Term Assumptions for Emergency Planning and Equipment Qualification," *ORNL/TM-8274*

490
Niemczyk, S.J.; McDowell-Boyer, L.M. "Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification," *ORNL/TM-8275*

491
O'Donnell, F.R.; Etnier, E.L. "An Assessment of Radiation Doses from Incandescent Gas Mantles that Contain Thorium," *ORNL-5815*

492
O'Donnell, F.R.; Etnier, E.L.; Holton, G.A.; Travis, C.C. "An Assessment of Radiation Doses from Residential Smoke Detectors that Contain Americium-241," *ORNL-5807*

493
O'Donnell, F.R.; Hoy, H.C. "Occupational Safety Data and Casualty Rates for the Uranium Fuel Cycle," *ORNL-5797*

494
O'Donnell, F.R.; Kocher, D.C.; Burke, O.W.; Clark, F.H. "CONDOS II - A Tool for Estimating Radiation from Radionuclide-Containing Consumer Products," *ORNL/NUREG/TM-454*

495
Oakes, K.M.; Etnier, E.L. "Unconventional Gas," *ORNL-5911*

496
Phillips, J.E.; Easterly, C.E. "Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water," *ORNL/TM-7670*

497
Pleasant, J.C.; McDowell-Boyer, L.M.; Killough, G.G. "RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF," *ORNL/TM-8011*

498
Randolph, M.L.; Chester, R.O. "Summary of Visits to Seven Selected NRC Licenses Sites," *ORNL/HASRD-136*

499
Randolph, M.L.; Eckerman, K.F. "Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report," *ORNL/HASRD-151*

500
Reed, R.M.; Etnier, E.L.; Kroodsma, R.L.; Mulholland, P.J.; Oakes, K.M.; Reed, R.M.; Roop, R.D.; Sale, M.J.; Schweitzer, M.; Switek, J.; Vaughan, N.D.; Voorhees, L.D.; Waits, E.D. "Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies," *ORNL-5911*

501
Richmond, C.R.; Walsh, P.J.; Copenhaver, E.D. "Health Risk Analysis – Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27–30, 1980," *ORNL/FPO–82/24*

502
Ryan, M.T.; Butler, H.M.; Gupton, E.D.; Sims, C.S. "Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC–ND Employee Identification Badge," *ORNL/TM–8294*

503
Ryan, M.T.; Fields, D.E. "PREREM: An Interactive Data Preprocessing Code for INREM II – Part I: User's Manual – Part II: Code Structure," *ORNL/NUREG/TM–422*

504
Sale, M.J.; Etnier, E.L.; Schweitzer, M.; Waits, E.D. "Western Oil Shale," *ORNL–5911*

505
Sale, M.J.; Kroodsma, R.L.; Schweitzer, M.; Etnier, E.L. "Coal Gasification and Liquefaction," *ORNL–5911*

506
Schuresko, D.D.; Hawthorne, A.R.; Vo–Dinh, T.; Gammage, R.B.; Dreibelbis, W.G.; Van Hoesen, S.D. "Survey of PNA Emissions at the University of Minnesota–Duluth Gasifier," *ORNL/TM–8414*

507
Shor, R.W.; Baes, C.F., III; Sharp, R.D. "Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food–Chain Transport and Assessment Models," *ORNL–5768*

508
Sims, C.S.; Killough, G.G. "Reference Dosimetry for Various Health Physics Research Reactor Spectra," *ORNL/TM–7748*

509
Sullivan, R.E.; Nelson, N.S.; Ellett, W.H.; Dunning, D.E., Jr.; Leggett, R.W.; Yalcintas, M.G.; Eckerman, K.F. "Estimates of Health Risk from Exposure to Radioactive Pollutants," *ORNL/TM–7745*

510
Swaja, R.E.; Greene, R.T. "Seventeenth Nuclear Accident Dosimetry Intercomparison Study: August 11–15, 1980," *ORNL/TM–7696*

511
Swaja, R.E.; Sims, C.S.; Greene, R.T. "Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10–14, 1981," *ORNL/TM–8281*

512
Swaja, R.E.; Sims, C.S.; Greene, R.T. "Seventh Personnel Dosimetry Intercomparison Study," *ORNL/TM–8080*

513
Todo, A.S.; Hiromoto, G.; Turner, J.E.; Hamm, R.N.; Wright, H.A. "User's Manual for PHOEL–3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV," *ORNL/TM–8259*

514
Triegel, E.K.; Kocher, D.C. "An Identification of Processes and Parameters of Importance to Estimation of Uncertainties in Long–Term Collective Dose and Health Effects Resulting from Geologic Disposal of High–Level Radioactive Waste," *ORNL/NUREG/TM–456*

515
Wentland, J.L. "U.S. Department of Energy Fast Reactor Safety Program Progress Report July–September 1981," *ORNL/FPO-81/129*

516
Wentland, J.L. "U.S. Department of Energy Fast Reactor Safety Program Progress Report, April–June 1982, ORNL Sections," *ORNL/FPO-82/89*

517
Wentland, J.L.; Montgomery, B.H.; Chester, R.O.; Miller, C.W.; Cottrell, W.D.; Greene, N.M.; Knee, H.E. "U.S. Department of Energy Fast Reactor Safety Program Progress Report January–March 1981," *ORNL/FPO-81/49*

518
Watson, A.P.; Birchfield, T.E.; Fore, C.S. "Risk Assessment of Coal Production: An Information System User's Manual," *ORNL/TM-8421*

519
Watson, A.P.; Holton, G.A.; O'Donnell, F.R.; Little, C.A.; Gill, S.J.; Barnthouse, L.W. "Estimated Environmental Concentrations and Population Exposure to Potential Synfuel Effluents: Indirect Liquefaction and Generic Technologies," *ORNL/TM Report (in Review)*

520
Watson, A.P.; Smith, J.G.; Elmore, J.L. "A Survey of Potential Health and Safety Hazards of Commerical-Scale Ethanol Production Facilities," *ORNL/TM-7817*

521
Witherspoon, J.P. "Technology and Costs of Termination Surveys Associated with Decommissioning of Nuclear Facilities," *ORNL/HASRD-121*

522
Witherspoon, J.P.; Holoway, C.F. "Technology and Costs of Termination Surveys Associated with Decommissioning of Nuclear Facilities Technical Progress Report for January 1981," *ORNL/HASRD-113*

523
Witherspoon, J.P.; Holoway, C.F. "Technology and Costs of Termination Surveys Associated with Decommissioning of Nuclear Facilities Technical Progress Report for February 1981," *ORNL/HASRD-115*

524
Witherspoon, J.P.; Holoway, C.F. "Technology and Costs of Termination Surveys Associated with Decommissioning of Nuclear Facilities Technical Progress Report for March 1981," *ORNL/HASRD-119*

525
Witherspoon, J.P.; Holoway, C.F. "Technology and Costs of Termination Surveys Associated with Decommissioning of Nuclear Facilities Monthly Progress Report for April 1981," *ORNL/HASRD-124*

526
Witherspoon, J.P.; Holoway, C.F. "Technology and Costs of Termination Surveys Associated with Decommissioning of Nuclear Facilities Technical Progress Report for May 1981," *ORNL/HASRD-128*

527
Witten, A.J.; Kornegay, F.C.; Hunsaker, D.B., Jr.; Long, E.C., Jr.; Sharp, R.D.; Walsh, P.J.; Zeigham, E.A.; Gordon, J.S.; Lin, W.L. "The Implications of a Stochastic Approach to Air Quality Regulations," *ORNL/TM-8440*

528
Yalcintas, M.G. "Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29–30, 1982 – Abstracts," *ORNL/FPO-82/113*

ORAL PRESENTATIONS

529
Ashley, J.C. "Some Recent Results Related to the Z13 Effect," U.S.-Japan Seminar on Charged Particle Penetration Phenomena: Charge States and Dynamic Screening of Swift Ions in Solids, Honolulu, Hawaii, January 25-29, 1982

530
Ashley, J.C.; Anderson, V.E. "Energy Loss and Mean Free Path of Electrons in Silicon Dioxide," Insi. Electr. Electron. Eng. Conf. Nuclear and Space Radiation Effects, Seattle, July 21-24,1981

531
Ashley, J.C.; Ferrell, T.L.; Ritchie, R.H. "Probes for Sub-Micron Structures," Prog. Rev. The Physics and Chemistry of Energy-Related Atmospheric Pollution, Harper's Ferry, WV, Apr.21-23,1981

532
Baes, C.F., III "Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6-11,1982

533
Baes, C.F., III; Miller, C.W. "CRRIS: A Computerized Methodology for Assessing the Impact of Radionuclides Released to the Atmosphere," 26th Annu. Meet. Health Phys. Soc., Louisville, June 20-26,1981

534
Baes, C.F., III; Miller, C.W. "CRRIS: A Computerized Radiological Risk Investigation System," Int. Am. Nucl. Soc./Eur. Nucl. Soc. Top. Meet., Probabilistic Risk Assessment, Port Chester, NY, Sept.20-24,1981

535
Baes, C.F., III; Sharp, R.D. "Predicting Radionuclide Leaching from Root Zone Soil for Assessment Applications," Am. Nucl. Soc. Annu. Meet., Miami Beach, FL, June 7-12,1981

536
Baird, J.K. "Theory of Photodetachment of Negative Ions Dissolved in Free-Electron Liquids," 28th Int. Union Pure Appl. Phys. Congr., Vancouver, B.C., Canada, Aug.16-21,1981

537
Baird, J.K.; Maxey, D.V.; Carter, J.G.; Christophorou, L.G. "Thermodynamics of Electron Drift in Ammonia Vapor," Am. Phys. Soc., New York, Jan.26-29,1981

538
Becker, R.S. "An Investigation of Dissipative Forces Near Macroscopic Media," Dissertation presented at the University of Tennessee, Knoxville, August 1982

539
Becker, R.S.; Warmack, R.J.; Ferrell, T.L. "Electron Energy Losses in Microchannels," 42nd Annu. Conf. Physical Electronics, Atlanta, June 14-16,1982

540
Beene, J.R.; Bemis, C.E., Jr.; Kramer, S.D.; Young, J.P. "Laser-Optical Studies of the Spontaneous-Fission Isomer, 240m-Am," Conf. Lasers in Nuclear Physics, Oak Ridge, TN, Apr.21-23,1982

541
Bemis, C.E., Jr.; Beene, J.R.; Erb, K.A.; Ford, J.L.C., Jr.; Shapiva, D.; Shivakumar, B. "Development of a Laser Optically Pumped Polarized Target for Use in Heavy-Ion Physics," Conf. Lasers in Nuclear Physics, Oak Ridge, TN, Apr.21-23,1982

542
Bernard, S.R. "An Age-Dependent Bioassay Model for Calcium," 27th Annu. Conf. Bioassay, Analytical and Environmental Chemistry, New Mexico, Oct.1981

543
Bernard, S.R.; Nestor, C.W., Jr.; Eisele, G.R. "Mathematical Studies of the Absorption into Blood of Am-241 Citrate following Oral Intubation into the Stomach of Miniature Swine," 66th Annu. Meet. Fed. Am. Soc. Exp. Biol., New Orleans, Apr.15-23,1982

544
Bernard, S.R.; Nestor, C.W., Jr.; Eisele, G.R.; Eckerman, K.F. "Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate," Annu. Health Phys. Soc. Meet., Las Vegas, June 27-July 1,1982

545
Bernard, S.R.; Purdue, P. "A Metabolic Model for Hg As Inorganic Hg and Methyl Hg," Annu. Health Phys. Soc. Meet., Louisville, June 1981

546
Berven, B.A.; Myrick, T.E.; Clark, C.; Haywood, F.F.; Goldsmith, W.A. "Role of the Certifying Radiological Contractor in Decontamination and Decommissioning Projects," 26th Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

547
Berven, B.A.; Myrick, T.E.; Perdue, P.T. "Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6-11,1982

548
Berven, B.A.; Myrick, T.E.; Witt, D.A. "A Summary of Radiological Surveys at 22 Uranium Mill Sites," 26th Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

549
Berven, B.A.; Perdue, P.T.; Kark, J.B.; Gibson, M.O. "Use of a Cryogenic Sampler to Measure Radioactive Gas Concentration in the Main Off-Gas System at a High-Flux Isotope Reactor," 27th Annu. Health Phys. Soc. Meet., Las Vegas, June 27-July 1,1982

550
Birkhoff, R.D.; Attrey, J.S.; Painter, L.R.; Hubbell, H.H., Jr. "Evidence for Collective Electronic Oscillations on Electron Bombarded Liquids," Am. Phys. Soc., Baltimore, Apr.20-23,1981

551
Birkhoff, R.D.; Hubbell, H.H., Jr.; Ashley, J.C.; Painter, L.R. "Yield and Mean Free Paths of Photoelectrons from Liquid Hexamethylphosphorictriamide," Southeastern Sect. Am. Phys. Soc., New Orleans, Nov.23-25,1981

552
Brandt, W.; Rustgi, M.L.; Leung, P.T.; Turner, J.E. "Stellar Stopping Power and Thermalization Rates of Neutrinos via the Magnetic Moment," Am. Phys. Soc. Meet., Baltimore, Maryland, April 20-23, 1981

553
Broyde, S.; Hingerty, B.E. "Base Displacement in AAF and AF Modifice dCpdG: Syn and Anti Kranine," Second International Conference on Carcinogenic and Mutagenic N-Substituted Aryl Compounds, Hot Springs, Arkansas, March 30-April 1, 1982

554
Broyde, S.; Hingerty, B.E. "Minimized Conformational Potential Energy Calculations for the Major Adduct of N-acetory-2-acetylaminofluorene with dCpdG," Second SUNYA Conversation in Molecular Stereodynamics, Albany, New York, April 26-29, 1981

555
Buncick, M.C.; Hubbell, H.H., Jr.; Birkhoff, R.D · Becker, R.S. "A Computer-Controlled Method f Removal of Stray Magnetic Fields," Southeast. Se.. Am. Phys. Soc., New Orleans, Nov.23-25,1981

556
Butler, T.A.; Knapp, F.F., Jr.; Guyer, C.E. "Reactor Production of Osmium-191: Factors Important for Clinical Applications of the Os-191/Ir-191m Ultrashort-lived Radionuclide Generator," 3rd World Congress of the World Federation of Nuclear Medicine and Biology, Paris, September 1982

557
Callcott, T.A.; Beekman, D.W.; Arakawa, E.T. "Detection of K and Rare Earth Isotopes Using a Resonance Ionization Source and a Time-of-Flight Mass Spectrometer," Symp. on Resonance Ionization Spectroscopy and Its Application, Gatlinburg, Tennessee, June 1-5, 1981

558
Calle, E.E. "A Health Risk Analysis of the Oil Shale Technology," Am. Public Health Assoc. Annu. Meet., Los Angeles, Nov.1-5,1981

559
Calle, E.E. "Measurement-Based Criteria for Selection of Controls in a Mortality Case-Control Study," Annu. Meet. Soc. Epidemiol. Res., Snowbird, UT, June 17-19,1981

560
Calle, E.E.; Dudney, C.S. "Estimated Levels of Indoor Emissions from Wood and Coal Stoves," Am. Public Health Assoc. Annu. Meet., Los Angeles, Nov.1-5,1981

561
Calle, E.E.; Zeighami, E.A.; Morris, M.D. "Factors Determining Bias in the Odds Ratio When Using a Prevalent or Decedent Case Series," Soc. Epidemiol. Res., Cincinnati, June 16-18,1982

562
Carnes, S.A.; Copenhaver, E.D.; Sorensen, J.H.; Soderstrom, E.J.; Reed, J.H.; Peelle, E.B.; Bjornstad, D.J. "Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting," Inst. for Energy Analysis, Oak Ridge, TN, Mar.30,1982

563
Carnes, S.A.; Soderstrom, E.J.; Sorensen, J.H.; Peelle, E.B.; Reed, J.H.; Bjornstad, D.J.; Copenhaver, E.D. "Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting," Waste Manage. '82, Tuscon, AZ, Mar.11-15,1982

564
Chang, C.; Callcott, T.A.; Arakawa, E.T. "Diffusion of Au into Sn Thin Films Studied by the Attenuated Reflection Method," Southeast. Sect. Meet. Am. Phys. Soc., Lexington, KY, Oct.28-30,1982

565
Chen, C.H. "Detection and Counting of a Few Rare Gas Atoms," 12th International Conf. on the Physics of Electronics and Atomic Collisions (Poster Session), Gatlinburg, TN, July 15-21, 1981.

566
Chen, C.H.; Hurst, G.S.; Payne, M.G.; Willis, R.D. "Detection and Counting of a Few Rare Gas Atoms," 12th Int. Conf. Physics of Electronic and Atomic Collisions, Gatlinburg, TN, July 15-21,1981

567
Chen, C.H.; Hurst, G.S.; Payne, M.G.; Willis, R.D. "Detection and Counting of a Few Rare Gas Atoms," Annu. Meet. Am. Opt. Soc., Kissimmee, FL, Oct.26-30,1981

568
Chen, C.H.; Hurst, G.S.; Payne, M.G.; Willis, R.D. "Detection and Counting of a Few Rare Gas Atoms," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1-5,1981

569
Christian, W.; Miller, J.C.; Compton, R.N.; Stockdale, J.A. "Multiphoton Ionization Studies of Sodium and Cesium Atoms," 37th Symposium on Molecular Spectroscopy, The Ohio State University, Columbus, June 14-18,1982

570
Christian, W.; Miller, J.C.; Foltz, M.; Compton, R.N. "Multiphoton Ionization Studies of Sodium Atoms and Dimers," Div. of Electron and Atomic Physics, Am. Phys. Soc., Meet., New York, Dec.3-5,1981

571
Christie, N.T.; Jacobson, K.B. "Metal Ion Effects on Queunine-Containing tRNAs in Drosophila," Int. Symp. Biological Aspects of Metals and Metal-Related Diseases, Toronto, Oct.19-22,1981

572
Christie, N.T.; Jacobson, K.B. "Metal Ion Toxicity in Drosophila," Soc. Toxicol., Boston, Feb.22-26,1982

573
Christophorou, L.G. "Breakdown Strength of Gaseous Dielectrics," Gordon Conference on Dielectric Phenomena, Holderness School, Holderness, New Hampshire, August 2-6, 1982

574
Christophorou, L.G. "Breakdown Strengths of Gaseous Dielectrics," Workshop on Gaseous Breakdown Phenomena, Dahlgren, Virginia, September 15, 1982

575
Christophorou, L.G. "Electron Scattering Cross Sections at Low Energies and the Choice of Buffer Gases for Dielectric Gas Mixtures," NATO Advanced Study Institute: Electrical Breakdown and Discharges in Gases, Les Arcs, France, June 28-July 12, 1981

576
Christophorou, L.G. "Electron-Molecular Interactions in Low- and High-Pressure Systems: Basic Research and Applications," 15th Annu. Meet. Radiological Physics Contractors, Gettysburg, PA, May 4-6,1982

577
Christophorou, L.G. "Electron-Molecule Interactions," Gordon Conference on Plasma Chemistry, Tilton School, Tilton, New Hampshire, August 16-20, 1982

578
Christophorou, L.G. "Electron-Molecule Interactions: Basic Research and Applications," Univ. of Paris, Orsay, France, June 18, 1982

579
Christophorou, L.G. "Electronegative Gases," NATO Advanced Study Institute: Electrical Breakdown and Discharges in Gases, Les Arcs, France, June 28-July 12, 1981

580
Christophorou, L.G. "Fragmentation of Freons Upon Electron Impact and Applications," New York University, New York, New York, May 7, 1981

581
Christophorou, L.G. "Gases for Diffuse-Discharge Opening Switches," Dep. of Electrical Engineering, Texas Tech University, Lubbock, Texas, September 24, 1982

582
Christophorou, L.G. "Recent Advances in Gaseous Dielectrics at Oak Ridge National Laboratory," Laboratoire de Physique des Decharges, Ecole Superieure d'Electricite, France, June 15, 1982

583
Christophorou, L.G. "The Anomalous Electron Attachment Properties Breakdown Strength of Perfluoropropylene," Seventh International Conference on Gas Discharges and Their Applications, London, England, August 31-September 3, 1982

584
Christophorou, L.G. "The Role of Electron Swarm Studies in the Development of Gaseous Dielectrics," 2nd Int. Swarm Semin., ORNL, July 22-23,1981

585
Christophorou, L.G. (Editor) "Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982," Proc. Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982

586
Christophorou, L.G.; Carter, J.G.; Maxey, D.V. "Electron Motion in High-Pressure Polar Gases: Ammonia," 28th IUPAC Congress, Vancouver, BC, Canada, August 16-22, 1982

587
Christophorou, L.G.; Hunter, S.R.; Carter, J.G.; Mathis, R.A. "Gases for Possible Use in Diffuse-Discharge Switches," Workshop on Diffuse Discharge Opening Switches, Tamarron, CO, January 13-15, 1982

588
Christophorou, L.G.; James, D.R.; Pai, R.Y.; Sauers, I.; Pace, M.O.; Fatheddin, A. "Ternary Gas Dielectrics," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

589
Chu, Y.T. "The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder," Dissertation presented at the University of Tennessee, Knoxville, March 1982

590
Chu, Y.T.; Anderson, V.E.; Hubbell, H.H., Jr.; Ferrell, T.L. "The Uniform Asymptotic Solution for the Electromagnetic Scattering from a Cylinder-Tipped Half-Plane," Southeast. Sect. Am. Phys. Soc. Meet., Lexington, KY, Oct.28-30,1982

591
Compton, R.N. "Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules," 15th Annu. Radiological Physics Contractors Meet., Gettysburg, PA, May 4-6,1982

592
Compton, R.N. "Negative Ion States," NATO Conf. Photophysics and Photochemistry in the Vacuum Ultraviolet, Lake Geneva, WI, Aug.15-29,1982

593
Compton, R.N. "Production and Reactions of Negative Ions," NATO Conf. Photophysics and Photochemistry in the Vacuum Ultraviolet, Lake Geneva, WI, Aug.15-29,1982

594
Compton, R.N. "Studies of Quartet States of the e-He System," ICPEAC Satellite Conf. Electron Scattering from Atoms and Atomic Ions, Goddard Space Flight Center, Greenbelt, MD, July 23-24,1981

595
Compton, R.N.; Alton, G.D.; Pegg, D.J. "Autodetachment Spectroscopy: Long-Lived Negatively-Charged Helium Ions," 12th Int. Conf. Physics of Electronic and Atomic Collisions, Gatlinburg, TN, July 15-21,1981

596
Compton, R.N.; Miller, J.C. "Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules," Int. Conf. Lasers '81, New Orleans, Dec.14-18,1981

597
Compton, R.N.; Miller, J.C. "Multiphoton Ionization of Atoms and Molecules," Opt. Soc. Am. Top. Meet. Laser Techniques for Extreme Ultraviolet Spectroscopy, Boulder, CO, Mar.8-10,1982

598
Compton, R.N.; Miller, J.C. "Third Harmonic Generation for Photoionization Studies," U.S./Japan Semin. Electron-Molecule Collisions and Photoionization Processes, Jet Propulsion Laboratory, Pasadena, CA, Oct.26-29,1982

599
Copenhaver, E.D. "Social and Institutional Issues in Energy Development," Annu. Meet. Am. Rural Health Assoc., Workshop Health and Institutional Impacts of Energy Development, Brainerd, MN, June 13,1981

600
Copenhaver, E.D.; Carnes, S.A.; Sorensen, J.H.; Soderstrom, E.J.; Reed, J.H.; Peelle, E.B.; Bjornstad, D.J. "Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting," Natl. Waste Terminal Storage Program Information Meet., Columbus, OH, Nov.17-19,1981

601
Crawford, D.J. "Age Dependent Considerations in Estimating the Risk of Lung Carcinomas following Lifetime Exposure to Inhaled Radionuclides," Workshop Lung Dosimetry, 30th Annu. Meet. Radiat. Res. Soc., Salt Lake City, Apr.18-22,1982

602
Crawford, D.J. "An Age-Dependent Model for the Induction of Lung Carcinomas following Inhalation of a Radioactive Atmosphere," Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

603
Crawford, D.J.; Soderstrom, E.J.; Carnes, S.A. "Rationality, Probability and Public Policy," Workshop Low Probability/ High Consequence Risk Analysis, Soc. Risk Anal., Arlington, VA, June 15-17,1982

604
Cristy, M. "Mathematical Phantoms for Evaluation of Age-Specific Internal Dose," Am. Nucl. Soc. Ann. Meeting, Miami, Florida, June 1981

605
Cristy, M. "Specific Absorbed Fractions for Breasts," Health Phys. Soc. Annu. Meet., Louisville, June 1981

606
Cristy, M. "Usefulness of the Reciprocity Theorem for Internal Dose Calculations: Practical Experience from Monte Carlo Studies," Annu. Meet. Health Phys. Soc., Las Vegas, June 27-July 1,1982

607
DeBlieck, N.J. "SUMIT: A Computer Code for the Systematic Unification of Multiple Input Tables of Data," GLCA Student Semin. Talks, ORAU, Dec.17,1981

608
Doane, R.W.; Blair, M.S.; Cottrell, W.D.; Goldsmith, W.A. "A Soil Counter for Estimating Ra-226 Concentrations in the Field," Annu. Meet. Health Phys. Soc., Las Vegas, Nevada, June 26-July 1,1982

609
Donohue, D.L.; Young, J.P.; Smith, D.H.; "Tuned Laser Ionization Mass Spectrometry Mixture Analysis," Anal. Chem. Div. Inf. Meet., ORNL, July 12-14, 1982.

610
Dudney, C.S.; Calle, E.E.; Walsh, P.J.; Griffin, G.D.; Jones, T.D. "On the Use of Relative Toxicity for Risk Estimation," Application of Short-Term Bioassays in the Analysis of Complex Environmental Mixtures Symp., Triangle Park, NC, Jan.25-27,1982

611
Dudney, C.S.; Walsh, P.J.; Becker, J.M. "Fungi in Loose Fill Attic Insulation," Conf. Thermal Insulations, Materials, and Systems for Energy Conservation in the 80's, Clearwater, FL, Dec.8-10,1981

612
Dudney, C.S.; Walsh, P.J.; Owen, B.A. "On the Application of Short Term Biotests to Health Risk Analysis of Fluorinated Compounds," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, Mar.7-11,1982

613
Dunning, D.E., Jr.; Leggett, R.W.; Williams, L.R. "A Probabilitic Methodology for Estimating Radiation-Induced Cancer Risk," Int. Am. Nucl. Soc./Eur. Nucl. Soc. Top. Meet. Probabilistic Risk Assessment, Port Chester, NY, Sept.20-24,1981

614
Dunning, D.E., Jr.; Schwarz, G. "Imprecision in Predicted Dose from Cs-137 Resulting from Biological Variability," Annu. Meet. Am. Nucl. Soc., Miami Beach, FL, June 7-12,1981

615
Easterly, C.E. "Cardiovascular Risk from Exposure to Static Magnetic Fields," 3rd Annu. Meet. Bioelectromagn. Soc., Washington, DC, Aug.10-12,1981

616
Easterly, C.E. "Considerations for Tritium Protection at a Fusion Reactor," US/Japan Workshop Tritium Radiology and Health Physics, Chiba, Japan, Oct.27-28,1981

617
Eckerman, K.F. "Approach to Internal Dosimetry of ICRP-30," Jt. Meet. of Delaware Valley, Western Pa., and Baltimore- Washington Chapters of the Health Physics Soc., May 1982

618
Eckerman, K.F. "Off-Site Dose Calculations," Health Phys. Soc. Summer School, Lexington, KY, 1981

619
Eckerman, K.F. "The Impact of Risk Considerations on Dosimetry of Radiopharmaceuticals," Annu. Am. Nucl. Soc. Meet., Miami Beach, FL, June 7-12,1981

620
Eckerman, K.F.; Ford, M.R.; Watson, S.B. "Dosimetric Data and Dose Limits Computed for ICRP Publication 30," Annu. Health Phys. Soc. Meet., Louisville, June 1981

621
Eckerman, K.F.; Ford, M.R.; Watson, S.B. "Significance of Cross Irradiation in the Estimation of Internal Dose," Health Phys. Soc. Annu. Meet., Las Vegas, June 27-July 1,1982

622
Eckerman, K.F.; Simpson, R.E. "S-Factors for the Ten-Year Old," Annu. Health Phys. Soc. Meet., Louisville, June 1981

623
Eckerman, K.F.; Watson, S.B.; Fore, C.S. "ORNL-ICRP Dosimetric Data Base," Am. Nucl. Soc. Winter Meet., Washington, DC, Nov.14-19,1982

624
Emanuel, W.R.; Killough, G.G.; Post, W.M.; Shugart, H.H., Jr. "Modeling Terrestrial Carbon Cycling at the Global Scale," Annu. Meet. Ecol. Soc. Am., American Institute of Biological Sciences, Bloomintgon, IN, August 17, 1981.

625
Emanuel, W.P ; Post, W.M.; Killough, G.G.; Shugart, H.H., Jr. "Model Calculations To Estimate Ranges for the Influence of Terrestrial Ecosystems on the Global Carbon Cycle," Symp. Global Carbon Cycle, Ecol. Soc. Am.-Am. Inst. Biol. Sci. Meet., Bloomington, IN, Aug.16-24,1981

626
Etnier, E.L.; Travis, C.C. "Health Risk Associated with the Use of Cadmium in the Photovoltaic Industry," Int. Symp. Alternative Energy Sources and Technology, San Francisco, May 20-22,1981

627
Fatheddin, A.; Pace, M.O.; Christophorou, L.G.; Pai, R.Y. "Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

628
Ferrell, T.L. "Basic Theory of Surface Plasmons," ORNL Chemical Physics Seminar, Summer, 1982

629
Ferrell, T.L. "The Surface Plasmon Contribution to Surface-Enhanced Raman Spectroscopy," U.S. Army Chemical Systems Laboratory Colloquium, Aberdeen Proving Grounds, Maryland, May 19, 1982

630
Ferrell, T.L.; Birkhoff, R.D. "Particulates and Submicron Physics," Program Review, The Physics and Chemistry of Energy-Related Atmospheric Pollution, Harper's Ferry, WV, Apr.21-23,1981

631
Fields, D.E. "Methodology and Code for Specifying Probabilistic Risk Coefficients," Int. Meet. Thermal Nuclear Reactor Safety, Chicago, Aug.29-Sept.2,1982

632
Fields, D.E.; Little, C.A.; Emerson, C.J. "A Low-Level Waste Shallow Burial Assessment Code," Natl. Conf. Environmental Engineering, Atlanta, July 8-10,1981

633
Fields, D.E.; Little, C.A.; Emerson, C.J.; Hiromoto, G. "Consequences of Low-Level Radioactive Waste Burial," Annu. Meet. Tennessee Acad. Sci., Martin, TN, Nov.19-20,1982

634
Fields, D.E.; Little, C.A.; Emerson, C.J.; Hiromoto, G. "Preliminary Simulations of Health Risks from Long Term Shallow-Land Burial of Low-Level Radioactive Wastes," Annu. Meet. Tennessee Acad. Sci., Clarksbille, TN, Nov.21,1981

635
Fields, D.E.; Little, C.A.; Emerson, C.J.; Hiromoto, G. "Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks," Waste Manage. '82, Tucson, AZ, Mar.8-11,1982

636
Fields, D.E.; Little, C.A.; Emerson, C.J.; McDowell-Boyer, L.M. "A Computerized Methodology for Evaluating the Long-Range Radiological Impact of Shallow-Land Burial," UCC-ND Environmental Protection Semin., Paducah, KY, Apr.21-22,1981

637
Fields, D.E.; Miller, C.W.; Cotter, S.J. "Validation of Annual Average Air Concentration Predictions from the AIRDOS-EPA Computer Code," Nucl. Div. Environmental Protection Semin., Barkley Lodge, KY, Apr.21-22,1981

638
Fields, D.E.; Miller, C.W.; Kurtz, S.E.; Cotter, S.J. "The Objective Validation of Model Performance: Application to Atmospheric Transport Models," Annu. Meet. Am. Geophys. Union, San Francisco, Dec.7-11,1981

639
Foltz, G.W.; Payne, M.G.; Hurst, G.S. "Measurement of Absolute Photoionization Cross Sections for the 7p Excited States of Cesium," 34th Annu. Gaseous Electronics Conf., Boston, Oct.20-23,1981

640
Frees, L.C.; Sauers, I.; Christophorou, L.G.; Ellis, H.W. "Positive Ions Observed in Sparked Sulfur Hexafluoride and Sulfur Hexafluoride-Containing Mixtures at 40 kPa," Conf. Mass Spectrometry and Allied Topics, Minneapolis, May 24-29,1981

641
Gammage, R.B. "New Workplace Monitors for Measuring Exposure to Oil and Tars," Semin. Univ. of Kentucky, Inst. for Mining and Mineral Research, Lexington, May 5,1982

642
Gammage, R.B.; Chowdhury, A. "Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters," DOE Workshop Personnel Neutron Dosimetry: Optimum Electrochemical Etching Parameters for Cr-39 Fast Neutron Dosimeters, Louisville, KY, June 17-19,1981

643
Gammage, R.B.; Glasson, D.R.; Hodgson, I.R.; O'Neill, P. "Microcrystalline Structure of Milled Dolomite and Its Constituent Carbonates," 56th Colloid and Surface Sciences Symp., Virginia Polytechnic Inst. and State Univ., Blacksburg, June 13-16,1982

644
Gardner, R.H.; O'Neill, R.V.; Hoffman, F.O. "Assessing Model Uncertainties," Symp. on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste, Gatlinburg, TN, March 9-13, 1981.

645
Garrett, W.R. "Consequences of the Long Range Dipole Potential in Electron-Molecule Interactions," 13th Annu. DEAP Meet., New York, Dec.3-5,1981

646
Garrett, W.R. "Effect of Third-Harmonic Fields on Multiphoton Ionization Near Three-Photon Resonance," FOM Institute, Amsterdam, The Netherlands, May 24, 1982.

647
Garrett, W.R. "Influence of Cooperative Effects on Multiphoton Ionization Near Three-Photon Resonance," Chemical Physics Semin., ORNL, April 26, 1981.

648
Garrett, W.R. "Multiphoton Ionization Through Near Resonant Three-Photon Transitions in Noble Gases," Dep. of Physics, University of Kaiserslautern, FRG, June 28, 1982

649
Garrett, W.R. "Negative Ion States of Polar Molecules," Dep. of Physics, University of Freiburg, FRG, June 30, 1982

650
Garrett, W.R. "Resonance Ionization Spectroscopy Theory: Atomic Physics Requirements," Resonance Ionization Spectroscopy Symp., June 1-5,1981, Gatlinburg, TN

651
Garrett, W.R. "Very Low Energy Resonance States of Alkali Hydride and Alkali Halide Negative Ions," 7th Int. Conf. Physics of Electronic and Atomic Collisions, Gatlinburg, TN, July 15 -21,1981

652
Garrett, W.R.; Payne, M.G.; Ferrell, W.R.; Miller, J.C.; Compton, R.N. "Cooperative Effects on Multiphoton Ionization near Three-Photon Resonances: Experiment and Theory," 12th Int. Quantum Electronics Conf., Munich, Federal Republic of Germany, June 22-25,1982

653
Glownia, J.H.; Riley, S.J.; Colson, S.D.; Miller, J.C.; Compton, R.N. "Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra," 12th Int. Conf. Physics of Electronic and Atomic Collisions Gatlinburg, TN, July 15-21,1981

654
Goldsmith, W.A. "Nuclear Archaeology - The RASCA Program at ORNL," 109th Annu. Meet. Am. Public Health Assoc., Los Angeles, Nov.1-5,1981

655
Goldsmith, W.A.; Haywood, F.F.; Perdue, P.T. "Rn-222 and Progeny Measurements in "Typical" East Tennessee Residences," 26th Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

656
Goldsmith, W.A.; Yates, W.G. "Finding and Evaluating Potential Radiological Problems in the Vicinity of Uranium Milling Sites," Int. Symp. Management of Wastes from Uranium Mining and Milling, Albuquerque, NM, May 10-14,1982

657
Goodman, M.M.; Callahan, A.P.; Knapp, F.F., Jr.; Strauss, H.W.; Richards, P.; Mausner, L.F. "New Myocardial Imaging Agents - Preparation of 15-(p-[I-123]Iodophenyl)-6-Tellurapentadecanoic Acid from Na[I-123] by a Triazene Decomposition Reaction," Int. Symp. Developing Role of Short-Lived Radionuclides in Nuclear Medical Practice, Washington, DC, May 3-5,1982

658
Goodman, M.M.; Kirsch, G.; Knapp, F.F., Jr. "Synthesis of Radioiodinated w-p-(Iodophenyl)-Substituted Methyl Branched Long-Chain Fatty Acids," 4th Int. Symp. Radiopharmaceutical Chemistry, KFA Juelich, Federal Republic of Germany, Aug.23-27,1982

659
Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Elmaleh, D.R.; Strauss, H.W.; Ferren, L.A. "Synthesis and Biodistribution Studies of Terminal Radioiodinated Tellurium Fatty Acids," Second International Symposium on Radiopharmacology, Chicago, Illinois, September 8-12, 1981

660
Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Elmaleh, D.R.; Strauss, H.W.; Ferren, L.A. "Terminal Radioiodinated Se and Te Long-Chain Fatty Acids: A Promising New Class of Myocardial Imaging Agents," Soc. Nucl. Med. Meet., Las Vegas, Nevada, June 15-19,1981

661
Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Ferren, L.A. "Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Agent Showing Prolonged Myocardial Retention," Soc. Nucl. Med. Meet., Miami, June 14-18,1982

662
Goodman, M.M.; Knapp, F.F., Jr.; Kirsch, G.; Callahan, A.P. "New Myocardial Imaging Agents: I-125(*1)-Labeled 14-(p-Iodophenyl)-2-(R,S)-Methyltetradecanoic Acid and 15-(p-Iodophenyl)-3-(R,S)-Methylpentadecanoic Acid," Soc. Nucl. Med. Meet., Miami, June 14-18,1982

663
Goodman, M.M.; Knapp, F.F., Jr.; Strauss, H.W.; Elmaleh, D.R.; Kopiwoda, S.Y.; Callahan, A.P.; Ferren, L.A. "Prolonged Myocardial Retention of 15-Phenyl-5-Tellurapentadecanoic Acid: A New Agent for Potential Labeling with I-123," 22nd Annu. Meet. Soc. Nucl. Med., Cincinnati, Oct.28-31,1981

664
Griffin, G.D.; Owen, B.A.; Atchley, C.E.; Solomon, A.M.; Walsh, P.J.; Novelli, G.D. "Immunoglobulin (IgG) Production in a Human Lymphoblastoid Cell Line: Alteration by Melphalan, a Cancer Chemotherapy Agent," Am. Assoc. Cancer Res., Washington, DC, Apr.27-30,1981

665
Griffin, G.D.; Owen, B.A.; Easterly, C.E.; Walsh, P.J. "In Vitro Cytotoxic Activity Related to Chemical Analysis of Sulfur Hexafluoride following Electrical Discharge," 34th Southeast. Reg. Am. Chem. Soc. Meet., Birmingham, AL, Nov.3-5,1982

666
Griffin, G.D.; Owen, B.A.; Easterly, C.E.; Walsh, P.J. "In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, Mar.7-11,1982

667
Griffin, G.D.; Owen, B.A.; Lynch, A.; Atchley, C.E.; Walsh, P.J.; Solomon, A.M.; Novelli, G.D. "Control of Synthesis and Excretion of Immunoglobulin (IgG) by a Human Lymphoblastoid Cell Line," 72nd Annu. Meet. Am. Soc. Biol. Chem., St. Louis, May 31-June 4,1981

668
Grigsby, R.A.; Knapp, F.F., Jr.; Callahan, A.P.; Ferren, L.A.; Irgolic, K.J. "New Brain Imaging Agents: Se-75 (*Se) and Te-123 (*Te)-Labeled Barbiturates," Soc. Nucl. Med. Meet., Las Vegas, June 15-19,1981

669
Hamm, R.N.; Paretzke, H.G.; Turner, J.E.; Wright, H.A.; Ritchie, R.H. "Calculations of Electron Transport in Water--Liquid and Vapor. I. Energy-Loss Phenomena," 29th Annu. Sci. Meet. Radiat. Res. Soc., Minneapolis, May 31-June 4,1981

670
Hamm, R.N.; Ritchie, R.H.; Turner, J.E.; Wright, H.A. "Inelastic Cross Sections for Electron Interactions in Liquid Water," Workshop on the Interface between Radiation Chemistry and Radiation Physics, Argonne National Laboratory, September 9-10, 1982

671
Hamm, R.N.; Rustgi, M.L.; Wright, H.A.; Turner, J.E. "Energy Spectra of Heavy Fragments in the Interaction of Protons with Communications Materials," Inst. Electr. Electron. Eng. Annu. Conf. Nuclear and Space Radiation Effects, Seattle, July 21-24,1981

672
Hardgrove, G.L.; Einstein, J.R.; Hingerty, B.E.; Wei, C.H. "The Crystal Structure of Adenine Dinitrate," Am. Crystallogr. Assoc. Meet., Gaithersburg, Maryland, March 29-April 2, 1982

673
Harrington, E.S.; Holton, G.A. "Fugitive Emissions from Incinerator Facilities in Hazardous Waste Service," UCC-ND/GAT Environmental Protection Semin., Gatlinburg, TN, Apr.5-7,1982

674
Harrington, E.S.; Holton, G.A.; O'Donnell, F.R. "An Initial Emission Assessment of Hazardous Waste Incineration Facilities," UCC-ND/GAT Environmental Protection Semin., Gatlinburg, TN, Apr.5-7,1982

675
Hawthorne, A.R. "Status of Formaldehyde Research at ORNL," Research Contractors Conference, Canadian National Research Council, Ottawa, Canada, April 26, 1982

676
Hawthorne, A.R. "Status of Formaldehyde Research at ORNL: An Update," Indoor Air Quality Workshop, Canadian National Research Council, Ottawa, Canada, September 1-2, 1982

677
Hawthorne, A.R.; Gammage, R.B. "An Evaluation of Formaldehyde Emission from Test Panels of UREA-Formaldehyde Foam Insulation," 75th Annu. Meet. Air Pollut. Control Assoc., New Orleans, June 20-25,1982

678
Hawthorne, A.R.; Matthews, T.G. "An Inexpensive Passive Formaldehyde Monitor for Indoor Air Quality Measurements," Int. Symp. Indoor Air Pollution, Health, and Energy Conservation, Amherst, MS, Oct.13-16,1981

679
Hingerty, B.E.; Brown, G.M.; Lindner, K.; Saenger, W. "Neutron Diffraction of Beta-cyclodextrin Water Inclusion Complex: An Analysis of H-Bonds and Water Structure in a Hydrophobic Cavity," NATO Advanced Study Institute, Current Methods in Structural Molecular Biology, Maratea, Italy, May 3-16, 1981

680
Hingerty, B.E.; Brown, G.M.; Lindner, K.; Saenger, W. "Neutron Diffraction of Beta-cyclodextrin Water Inclusion Complex: An Analysis of H-Bonds and Water Structure in a Hydrophobic Cavity," XIIth Congress of the International Union of Crystallography, Ottawa, Canada, August 16-25, 1981

681
Hingerty, B.E.; Broyde, S. "Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine," Int. Sanibel Symp. Quantum Theory Project Part II: Quantum Biology and Pharmacology, Palm Coast, FL, Mar.4-6,1982

682
Hingerty, B.E.; Hardgrove, G.L.; Saenger, W. "Neutron Diffraction Analysis of Gamma-Cyclodextrin: A Hydrogen Bond Study," Brookhaven Symp. Biology No. 32, Neutrons in Biology, Neutron Scattering Analysis for Biological Structures, New York, May 31-June 4,1982

683
Hoeschele, J.D.; Butler, T.A.; Roberts, J.A. "Synthesis and Biodistribution Studies of Pt-195m-Labeled cis-Dichloro-trans-Dihydroxy-bis(Isopropylamine) Platinum(IV), CHIP," Am. Chem. Soc. Meet., Lexington, KY, Nov.4-6,1981

684
Hoeschele, J.D.; Ferren, L.A.; Roberts, J.A. "Synthesis of Au-195-Labeled Analogs of Antirheumatoid Agent, Auranofin (AF), [Triethylphosphinegold(I) (2,3,4,6- Tetra-O-Acetyl-1-Thio-Beta-D-Glucopyranoside)] and Preliminary Tissue Distribution Studies of Au-195-Labeled AF in Rats," Int. Symp. Synthesis and Applications of Isotopically Labeled Compounds, Kansas City, MO, June 6-11,1982

685
Hoffman, F.O.; Garten, C.T., Jr. "Field Investigations on the Behavior of Technetium in the Terrestrial Environment," Int. Symp. Migration in the Terrestrial Environment of Long-Lived Radionuclides from the Nuclear Fuel Cycle, Knoxville, TN, July 27-31,1981

686
Holton, G.A.; Hoffman, F.O. "Importance of Identifying Organic Pollutants in Air," Div. Environ. Chem., Am. Chem. Soc., Kansas, MO, Sept.12-17,1982

687
Holton, G.A.; Staley, L.J. "Emission Source Assessment of a Hazardous Waste Incineration Facility," 75th Annu. Meet. Air Pollut. Control. Assoc., New Orleans, June 20-25,1982

688
Holton, G.A.; Talmage, S.S.; Hoffman, F.O. "Importance of Identifying Organic Pollutants in Air," Am. Chem. Soc. Annu. Meet., Kansas City, MO, Sept.12-17,1982

689
Hoy, H.C.; O'Donnell, F.R. "Occupational Risk from Nuclear Power," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6-11,1982

690
Hunter, S.R.; Christophorou, L.G.; James, D.R.; Mathis, R.A. "Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

691
Hunter, S.R.; Christophorou, L.G.; James, D.R.; Mathis, R.A. "The Variation with Pressure of the Electron Attachment Rate in Perfluoroalkanes and Perfluoropropylene and its Effect on the Breakdown Strength of These Gases," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

692
Hurst, G.S. "A Survey of Resonance Ionization Spectroscopy," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1-5,1981

693
Hurst, G.S. "Applications of Resonance Ionization Spectr[illegible] 15th Annual Radiological Physics Contract[illegible]leeting, Gettysburg, PA, May 4-6, 1982.

694
Hurst, G.S. "Applications of Resonance Ionization Spectroscopy and One-Atom Detection," Int. Safeguards Meeting, Department of Energy, Washington, DC, June 8-9, 1981

695
Hurst, G.S. "Counting Atoms," Soc. of Physics Students, Memphis State University, Memphis, TN, April 3, 1981.

696
Hurst, G.S. "Counting Atoms in Weak Interaction Physics," Physics Colloquium, Univ. of Tennessee, Knoxville, Dec.8,1981

697
Hurst, G.S. "Counting the Atoms," Am. Chem. Soc., Las Vegas, Mar.29-30,1982

698
Hurst, G.S. "Counting the Atoms: Applications to the Physical, Chemical, and Environmental Sciences," McGill University, Montreal, Canada, October 23. 1981

699
Hurst, G.S. "Discovering the Nature of Things by Counting the Atoms," Symp. Honor of Lewis Cochran, Univ. of Kentucky, Lexington, Apr.10,1981

700
Hurst, G.S. "Laser Counting of Atoms," Harvard University, Cambridge, MA, May 3, 1982.

701
Hurst, G.S. "Laser Techniques for Counting Atoms," Workshop Advanced Laser Technology for Chemical Measurements, Ames Lab., Iowa State Univ., Ames, Oct.6,1981

702
Hurst, G.S. "Laser Techniques for Counting Atoms," Southeast. Sect. Am. Phys. Soc., New Orleans, LA, Nov.23-25,1981

703
Hurst, G.S. "One-Atom Detection: Applications to Weak Interaction Physics," McGill University, Montreal, Canada, October 22, 1981

704
Hurst, G.S. "Resonance Ionization Spectroscopy and Single Atom Counting," Indiana University, Bloomington, IN, October 7, 1981.

705
Hurst, G.S. "Resonance Ionization Spectroscopy and Single Atom Counting," Purdue University, West Lafayette, IN, October 8, 1981

706
Hurst, G.S.; Chen, C.H.; Kramer, S.D.; Payne, M.G.; Willis, R.D. "A Radiochemical Solar Neutrino Experiment Using 81(upsilon,e-) 81Kr," Workshop on Science Underground, Los Alamos National Laboratory, Los Alamos, NM, Sept. 26-Oct. 1, 1982.

707
Hurst, G.S.; Payne, M.G.; Chen, C.H.; Willis, R.D.; Lehmann, B.E.; Kramer, S.D. "Resonance Ionization Spectroscopy: Counting Noble Gas Atoms," Int. Conf. Laser Spectroscopy, Jasper Park, Alberta, Canada, June 29-July 3,1981

708
Inhaber, H. "Are Solar and Conservation Riskier than Nuclear?," Am. Nucl. Soc./Soc. Women Eng., Cambridge, Mass., January 1982.

709
Inhaber, H. "Comparative Risk of Energy Production," Faculty Institute on Nuclear Power: Fission and Fusion, ORAU, July 1982

710
Inhaber, H. "Comparative Risks of Energy Technologies," IAEA Course, Chicago, Apr.7-9,1981

711
Inhaber, H. "Doing a Risk Analysis," 2nd Annu. Eastern Regional Safety Congress, Philadelphia, Apr.30-May 1,1981

712
Inhaber, H. "H-Coal Liquefaction," 2nd Annu. Contract. Meet. Health and Environmental Risk Analysis Program, Alexandria, VA, Feb.1981

713
Inhaber, H. "How Risky is Conservation?," Int. Symp. Indoor Air Pollution, Health and Energy Conservation, Amherst, MA, Oct.13-16,1981

714
Inhaber, H. "Is Small Brutal? Risk as if People Mattered," Information Center Complex, Information Division, ORNL, April 1981

715
Inhaber, H. "Is Small Brutal? Risk as if People Mattered," Information Center Complex, ORNL, April 1981

716
Inhaber, H. "Is Small Brutal? Risk as if People Really Mattered," BNL, Upton, NY, May 4,1981

717
Inhaber, H. "Is Solar Energy Riskier Than Nuclear?," Sigma Xi Banquet on Relative Risk, Madison, WI, Apr.13-14,1981

718
Inhaber, H. "Is Solar Energy Riskier than Nuclear?," Workshop Nuclear Power and the Energy Crisis, ORAU, Oct.?6,1981

719
Inhaber, H. "Is Solar Energy Riskier than Nuclear?," Oak Ridge Unitarian Congregation, Oak Ridge, TN, June 1981

720
Inhaber, H. "Is Solar Riskier Than Nuclear?," Am. Ceram. Soc., Gatlinburg, TN, July 1982

721
Inhaber, H. "Perceptions of Risk of Energy Systems," Inst. for Energy Analysis/ORAU Newspaper Editors Semiar, Oak Ridge, TN, April 1982

722
Inhaber, H. "Relative Energy Risk: Is Solar Energy Riskier than Nuclear?," Inst. Manage. Sci. Natl. Meet., Toronto, May 5-6,1981

723
Inhaber, H. "Relative Risk of Energy Systems," Workshop on Nuclear Power and the Energy Crisis, ORAU, Oak Ridge, TN, April 1982

724
Inhaber, H. "Risk Assessment for Occupational Safety and Health," Organization Research Counselors, Inc., Washington, DC, May 6-7,1981

725
Inhaber, H. "Risk Estimation," NRC Health Physics and Radiation Protection Course, ORAU, Oak Ridge, TN, March 1982

726
Inhaber, H. "Risk Estimation," Workshop on Nuclear Power and the Energy Crisis, ORAU, Oak Ridge, TN, April 1982

727
Inhaber, H. "Risk Estimation," Workshop on Nuclear Power and the Energy Crisis, ORAU, September 1982

728
Inhaber, H. "Risk of Energy Production and Conservation," Commission a l'Energie Atomique, Paris, France, September, 1981

729
Inhaber, H. "Risk of Energy Production and Conservation," Commission for European Economic Community, Brussels, Belguim, Sept. 1981

730
Inhaber, H. "Risk of Energy Production and Conservation," Kraftwerke Union, Offenbach, Federal Republic of Germany, Sept. 1981

731
Inhaber, H. "Risk of Energy Production and Conservation," Int. Institute for Applied Systems Analysis, Laxenburg, Austria, Sept. 1981

732
Inhaber, H. "Risk of Energy Production and Conservation," Tennessee Valley Unitarian Church, Knoxville, TN, November 1981

733
Inhaber, H. "Risk of Energy Production and Conservation," Denison University, Granville, Ohio, November 1981

734
Inhaber, H. "Risk of Energy Production and Conservation," Tennessee State University, Nashville, TN, November 1981

735
Inhaber, H. "The Risk Analysis Initiative at ORNL," Health and Safety Research Division Information Meeting, Oak Ridge National Laboratory, Oak Ridge, TN, October 7-8, 1981

736
Inhaber, H.; Caton, G.M.; Gove, R.M. "Health Risk Associated with Energy Conservation," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6-11,1982

737
Inhaber, H.; Caton, G.M.; Gove, R.M. "Risk of House Energy Conservation," Workshop Low-Probability, High-Consequence Risk Analysis, Arlington, VA, June 15-17,1982

738
Inhaber, H.; Caton, G.M.; Gove, R.M. "Risk of Producing Energy - and Conserving It," 6th Int. Symp. Uranium Inst., London, Sept.1981

739
Jacobson, K.B.; Turner, J.E.; Christie, N.T.; Owenby, R.K. "Toxic and Biochemical Effects of Divalent Metal Ions in Drosophila: Correlation to Effects in Mice and to Chemical Softness Parameters," 21st Hanford Life Sci. Symp. Biological Availability of Trace Metals, Richland, WA, Oct.4-8,1981

740
Jones, T.D. "A Generalized Leukemia Response-Function Which Could Resolve the BEIR Controversy," CARL Facility, Oak Ridge, TN, Mar.6,1981

741
Jones, T.D. "Hematologic Syndrome in Mammals and Man," 26th Annu. Health Phys. Soc. Meet., Louisville, June 21-26,1981

742
Jones, T.D. "Hematologic Syndrome in Man as a Result of Radiation Injury," ORAU, Dr. Lushbaugh's Group, Oak Ridge, TN, Mar.24,1982

743
Jones, T.D. "Participation in Governor Thornburgh's Blue Ribbon Advisory Panel on Health Research Studies," Health Phys. Soc., Oak Ridge, TN, Mar.17,1981

744
Kaye, S.V. "Welcoming Address for RIS Symposium," Resonance Ionization Spectroscopy Symp., Gatlinburg, TN, June 2,1981

745
Kaye, S.V.; Hoffman, F.O.; McDowell-Boyer, L.M.; Baes, C.F., III "Development and Application of Terrestrial Food Chain Models To Assess Health Risks to Man and Releases of Pollutants to the Environment," Int. Symp. Health Impacts of Different Sources of Energy, Nashville, TN, June 22-26,1981

746
Kerr, G.D. "Dosimetry for Japanese A-Bomb Survivors: Past Work and Recent Developments," New York Chapter Meet. Health Phys. Soc., Columbia Univ., New York, Oct.5,1981

747
Kerr, G.D. "Dosimetry for the Japanese Atomic Bomb Survivors," Plenary Symp. Revised Dosimetry of the Japanese Atomic Bomb Survivors and the Biological Consequences, Am. Assoc. Phys. Med., New Orleans, Aug.1-5,1982

748
Kerr, G.D. "Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors," Symp. Reevaluation of Dosimetric Factors, Hiroshima and Nagasaki, Germantown, MD, Sept.15-16,1981

749
Kerr, G.D. "New Dosimetric Evaluations for the Japanese Atomic-Bomb Survivors," School of Medicine, Univ. of Utah, Salt Lake City, June 11,1982

750
Kerr, G.D. "Review of Dosimetry for the Atomic Bomb Survivors," 4th. Symp. Neutron Dosimetry, Munich-Neuherberg, Federal Republic of Germany, June 1-5,1981

751
Kerr, G.D. "Review of Dosimetry for the Atomic Bomb Survivors," Conf. Statistical and Epidemiological Methods in Ionizing Radiation, Am. Stat. Assoc., Berkley Springs, WV, July 6-10,1981

752
Kerr, G.D. "Review of Dosimetry for the Atomic Bomb Survivors," Radiat. Res. Soc. Annu. Meet., Minneapolis, May 31-June 4,1981

753
Kerr, G.D. "Review of Dosimetry for the Atomic-Bomb Survivors," Semin., BNL, Upton, NY, Oct.5,1981

754
Kerr, G.D. "Review of Dosimetry for the Atomic-Bomb Survivors," East Tennessee-Alabama Chapter Health Phys. Soc., Huntsville, AL, Oct.16,1981

755
Killough, G.G.; Emanuel, W.R. "Distributions of Transit Time and Age for Several Models of Carbon Turnover in the Ocean," Symp. on Energy and Ecological Modelling, Louisville, KY, April 20-23, 1981.

756
Klots, C.E. "Basic Theory of Unimolecular Reactions," Univ. of Paris, Orsay, France, March 1, 1982.

757
Klots, C.E. "Kinetic Energy Distribution of Fragments,," Ecole Polytechnique, Paris, France, March 15, 1982.

758
Klots, C.E. "Mass Spectrometry of Van der Waals Molecules," Univ. of Paris, Orsay, France, October 9, 1981.

759
Klots, C.E. "Miscellaneous Topics Regarding Unimolecular Reactions," University of Paris, France, March 28, 1982.

760
Klots, C.E. "Modern Experiments in Unimolecular Reactions," University of Paris, France, March 22, 1982.

761
Klots, C.E. "Single-Ion Heats of Solution in Water," Am. Soc. Mass Spectrom., Minneapolis, May 1981

762
Klots, C.E. "Solubility of Protons in Water," Univ. of Paris, Orsay, France, March 5, 1982.

763
Klots, C.E. "Statistical Theories," Univ. of Paris, Orsay, France, March 8, 1982.

764
Klots, C.E. "Statistical Theory of Mass Spectra," Ecole Polytechnique, Paris, France, March 15, 1982.

765
Klots, C.E. "Theory of Sonic Nozzle Expansions," Univ. of Paris, Orsay, France, November 9, 1981.

766
Klots, C.E.; Compton, R.N. "Mechanisms for Ionization of Molecular Clusters," DOE Program Review, Harpers Ferry, WV, Apr.21-24,1981

767
Knapp, F.F., Jr.; Bittman, R. "24-(Isopropyltelluro)-chol-5-en-3 Beta-ol: A Unique Membrane Probe," 72nd Annu. Meet. Am. Soc. Biol. Chem., St. Louis, May 31-June 4,1981 4,1981

768
Knapp, F.F., Jr.; Goodman, M.M.; Callahan, A.P. "Radioiodination of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid by Triazene Decomposition with Radioiodide," 4th Int. Symp. Radiopharmaceutical Chemistry, KFA Juelich, Federal Republic of Germany, Aug.23-27,1982

769
Knapp, F.F., Jr.; Goodman, M.M.; Elmaleh, D.R.; Okada, R.D.; Strauss, H.W. "The Development of Radioiodinated Fatty Acids for Applications in Nuclear Cardiology," SNM Int. Symp. Developing Role of Short-Lived Radionuclides in Nuclear Medical Practice, Washington, DC, May 3-5,1982

770
Knapp, F.F., Jr.; Goodman, M.M.; Kabalka, G.W.; Sastry, A.R.; Callahan, A.P. "Synthesis and Evaluation of I-125 (*I)-Labeled 18-Iodo-13-Tellura-17- Octadecenoic Acid," Annu. Meet., Soc. Nucl. Med., Miami Beach, Florida, June 15-18, 1982

771
Knapp, F.F., Jr.; Grigsby, R.A.; Callahan, A.P.; Ferren, L.A.; Irgolic, K.J. "New Brain Imaging Agents: Se-75 (*Se) and Te-123m (*Te) Labeled Barbiturates," Ann. Meet., Soc. Nucl. Med., Las Vegas, Nevada, June 16-19, 1981

772
Knapp, F.F., Jr.; Vest, M.; Elmaleh, D.R.; Strauss, H.W.; Liss, R.H.; Ferren, L.A.; Callahan, A.P. "Myocardial Uptake of (10-[C-14]-9-THDA): Evidence for Retention of the Alkyl Region of 9-THDA," Soc. Nucl. Med. Meet., Las Vegas, Nevada, June 15-19,1981

773
Kocher, D.C. "Models and Risk from High-Level Waste Disposal - The Missing Pieces," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6-11,1982

774
Kocher, D.C. "On the Long-Term Behavior of Iodine-129 in the Terrestrial Environment," Int. Symp. on Migration in the Terrestrial Environment of Long-Lived Radionuclides from the Nuclear Fuel Cycle, Knoxville, TN,July 27-31, 1981

775
Kocher, D.C.; Sjoreen, A.L.; Bard, C.S.; Olsen, C.R. "Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste," Waste Manage. '82, Tucson, AZ, Mar.8-11,1982

776
Kourouklis, G.A.; Siomos, K.; Christophorou, L.G. "Laser Multiphoton Ionization as a Probe of Photophysical Processes in Liquids," 29th Annu. Sci. Meet. Radiat. Res. Soc., Minneapolis, May 31-June 4,1981

777
Kramer, S.D. "A Time-Resolved Laser Technique for the Study of Lithium Reactions with Oxygen," Chemical Physics Semin., ORNL, November 9, 1981

778
Kramer, S.D. "Lasers and Nonlinear Optical Effects," University of Tennessee, Knoxville, TN, May 27, 1982.

779
Kramer, S.D. "The Inert Gas Mediated Reaction of Oxygen with Lithium," Vanderbilt University, Nashville, TN, February 19, 1982.

780
Kramer, S.D.; Bemis, C.E., Jr.; Beene, J.R.; Young, J.P. "Laser-Induced Nuclear Polarization," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1-5,1981

781
Kramer, S.D.; Lehmann, B.E.; Hurst, G.S.; Payne, M.G. "The Ar Mediated Reaction of Lithium with Oxygen," Am. Phys. Soc. Spring Meet., Baltimore, Apr.20-23,1981

782
Lehmann, B.E. "Kr-81 Dating of Old Groundwater, Using Laser Resonance Ionization Spectroscopy," Semin., Dep. of Hydrology and Water Resources, Univ. of Arizona, Tucson, 1981

783
Lehmann, B.E. "RIS for Counting Noble Gas Atoms," Semin. Dep. of Physics, Univ. of Illinois, Chicago, Aug.13,1981

784
Lehmann, B.E.; Chen, C.H.; Hurst, G.S.; Payne, M.G.; Willis, R.D.; Kramer, S.D. "Isotope-Selective Noble Gas Atom Counting," 12th Int. Quantum Electronics Conf., Munich, Federal Republic of Germany, June 22-25,1982

785
Lehmann, B.E.; Kramer, S.D. "RIS Studies on Lithium and Lithium-Iodide," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1-5,1981

786
Little, C.A. "Recommendations of the Interagency Workshop on Modeling and Low-Level Waste Management," Waste Manage. '82, Tucson, AZ, Mar.8-11,1982

787
Little, C.A.; Fields, D.E. "EPA Risk Assessment Model for Shallow Land Disposal of Low Level Radioactive Wastes," 4th Annu. Participants' Inf. Meet. USDOE Low-Level Waste Manage. Prog., Denver, Aug.31-Sept.2,1982

788
Little, C.A.; Fields, D.E. "Simulations of Long Term Health Risk from Shallow Land Burial of Low Level Radioactive Waste," CNS Int. Conf. Radioactive Waste Management, Winnipeg, Manitoba, Canada, Sept.12-15,1982

789
Little, C.A.; Fields, D.E.; McDowell-Boyer, L.M.; Emerson, C.J. "The PRESTO Low-Level Waste Transport and Risk Assessment Code," Waste Manage. '81 Symp., Tucson, AZ, Feb.23-26,1981

790
Little, C.A.; Voorhees, L.D.; Reed, R.M. "Environmental Information Needed to License a Low-Level Waste Disposal Facility," Symp. Low-Level Waste Disposal: II. Site Characterization and Monitoring, Arlington, VA, June 16-17,1982

791
Little, J.W. "Surface Plasmon Radiation Due to Microscopic Surface Structure in Thin Metal Films," Tennessee Valley Chapter Am. Vac. Soc. Meet., Knoxville, TN, Oct.20,1981

792
Little, J.W.; Ferrell, T.L.; Callcott, T.A.; Arakawa, E.T. "Radiative Decay of Surface Plasmons on Nonspherical Silver Particles," Workshop on the Physics of Submicron Structures, Univ. of Illinois, Urbana, June 28-30,1982

793
Lothrop, C.D., Jr.; Uziel, M. "RNA Modified Nucleosides Which Are Excreted by Cells Have a Multiple Molecular Origin," Fed. Am. Soc. Exp. Biol., New Orleans, Apr.18-21,1982

794
Matthews, T.G. "Formaldehyde Monitoring Programs - Development of Sampling and Analysis Procedures for Low Concentrations of Formaldehyde in Indoor Air, Formaldehyde Release from Pressed Wood Products," U.S. Consumer Product Safety Commission Meeting with Industry, Washington, D.C., July 27-28, 1982

795
Matthews, T.G. "Formaldehyde Monitors," Environmental Instrumentation Conference, Oak Ridge National Laboratory, Oak Ridge, TN, May 21-22, 1982

796
Matthews, T.G. "Formaldehyde Release from Pressed Wood Products," ORNL Visitation of Canadian Government and Industrial Representatives, June 24, 1982

797
Matthews, T.G. "Formaldehyde Release from Pressed Wood Products," ORNL Visitation of U.S. Industrial Representatives, July 14, 1982

798
Matthews, T.G. "Formaldehyde Release from Pressed Wood Products," Georgia Pacific Corp. Eastern Research Headquarters, Decatur, Georgia, August 25, 1982

799
Matthews, T.G. "Practical Measurement Technology for Low Formaldehyde Levels," Formaldehyde Measuring and Monitoring Techniques, U.S. Consumer Product Safety Commission, Washington, D.C., July 6-7, 1981

800
Matthews, T.G.; Hawthorne, A.R.; Schrimsher, J.M. "Formaldehyde Surface Emission Monitor," Symp. Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources, Research Triangle Park, NC, May 4-7,1982

801
Matthews, T.G.; Howell, T.C. "Formaldehyde Emission from Pressed-Wood Products," 33rd Pittsburgh Conf./Expo. Analytical Chemistry and Applied Spectroscopy, Atlantic City, NJ, Mar.8-13,1982

802
Matthews, T.G.; Howell, T.C. "Formaldehyde Monitoring in Domestic Environments," Int. Symp. Indoor Air Pollution, Health and Energy Conservation, Amherst, MA, Oct.13-16,1981

803
Matthews, T.G.; Howell, T.C.; Hawthorne, A.R. "Practical Measurement Technology for Low Formaldehyde Concentration Levels: Applications to Personnel Monitoring Needs," EPA Natl. Symp. *Monitoring Hazardous Organic Pollutants in Air*, Raleigh, NC, May 1,1981

804
McCorkle, D.L.; Christophorou, L.G.; Hunter, S.R. "Electron Attachment Rate Constants and Cross Constants for Halocarbons," Second International Swarm Seminar, Oak Ridge National Laboratory, Oak Ridge, Tennessee, July 22-23, 1981

805
McDowell-Boyer, L.M.; Hetrick, D.M.; Holton, G.A. "A Screening-Level Multimedia Model to Predict Environmental Fate of Toxic Chemicals," 2nd Annu. Meet. Soc. Environ. Toxicol. Chem., Arlington, VA, Nov.22-24,1981

806
Meyer, H.R. "Reactor Emergency Planning - Analysis of Key Uncertainties," Annu. Meet. Health Phys. Soc., Las Vegas, June 27-July 1,1982

807
Meyer, H.R. "The Contribution of Residential Wood Combustion Local Airshed Pollutant Concentrations," Int. Conf. Residential Solid Fuels, Portland, OR, June 1-5,1981

808
Meyer, H.R. "The Impact of the Urban Electric Vehicle: Assessing National Economic and Environmental Tradeoffs," Int. Assoc. Sci. Tech. Dev. Conf., San Francisco, May 20-22,1981

809
Miller, C.W. "An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface," 2nd Symp. Composition of the Nonurban Troposphere, Williamsburg, VA, May 25-28,1982

810
Miller, C.W. "Comparison of Methods for Predicting Air Concentrations near Reactor Complexes," Winter Meet. Am. Nucl. Soc., San Francisco, Nov.29-Dec.4,1981

811
Miller, C.W. "Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6-11,1982

812
Miller, C.W.; Cotter, S.J. "Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters," 3rd Jt. Conf. Applications of Air Pollution Meteorology, San Antonio, TX, Jan.1982

813
Miller, C.W.; Fields, D.E.; Cotter, S.J. "Validation of Annual Average Air Concentration Predictions from the AIRDOS-EPA Computer Code," UCCND Environmental Protection Semin., Paducah, KY, Apr.21-22,1981

814
Miller, C.W.; Fields, D.E.; Wiseman, P.J. "Comparison of Observed and Predicted Sodium Air and Ground Concentrations," Am. Nucl. Soc. Winter Meet., Washington, DC, Nov.14-19,1982

815
Miller, C.W.; Hermann, O.W. "ANEMOS: A Code to Calculate Radionuclide Concentrations in Air," Am. Nucl. Soc. Annu. Meet., Miami Beach, FL, June 7-12,1981

816
Miller, C.W.; Hoffman, F.O. "An Analysis of Measured Values of the Environmental Loss Constant for Radionuclides Deposited on the Surfaces of Vegetation," IAEA Int. Symp. Migration in the Terrestrial Environment of Long-Lived Radionuclides from the Nuclear Fuel Cycle, Knoxville, TN, July 27-31,1981

817
Miller, C.W.; Little, C.A. "Uncertainty Estimates for Predictions of the Impact of Breeder Reactor Radionuclide Releases," Int. Top. Meet. Liquid Metal Fast Breeder Reactor Safety and Related Design and Operational Aspects, Lyon-Ecully, France, July 19-23,1982

818
Miller, J.C. "Aspects of Multiphoton Ionization," University of Illinois, Chicago, May 20,1982

819
Miller, J.C. "Laser Spectroscopy of Atoms and Molecules," Department of Chemistry, The Colorado College, Colorado Springs, ORAU Traveling Lecture, March 11,1982

820
Miller, J.C. "Multiphoton Ionization Spectroscopy of Atoms and Molecules," Chemistry Department, University of Tennessee, Knoxville, TN, April 3, 1981.

821
Miller. J.C. "Multiphoton Ionization Spectroscopy of Atoms and Molecules," Chemical Physics Seminar, ORNL, January 11, 1982

822
Miller, J.C. "Multiphoton Ionization Spectroscopy of Atoms and Molecules," Dep. of Chemistry, Georgia Institute of Technology, Atlanta, GA, February 11, 1982

823
Miller, J.C. "Nonlinear Spectroscopy of Atoms and Molecules," Chemistry Department, Yale Univ., New Haven, CT, December 1, 1981

824
Miller, J.C. "Vacuum Ultraviolet Spectroscopy Using Third-Harmonic Generation," Health and Safety Research Division Information Meeting, ORNL, October 8, 1981.

825
Miller, J.C.; Compton, R.N. "Multiphoton Ionization and Third Harmonic Generation in Atoms and Molecules," NATO Conf. Photophysics and Photochemistry in the Vacuum Ultraviolet, Lake Geneva, WI, Aug.15-29,1982

826
Miller, J.C.; Compton, R.N. "Multiphoton Ionization of Atoms and Molecules," ORAU Traveling Lect., Univ. of Colorado, Boulder and Colorado State Univ., Fort Collins, 1982

827
Miller, J.C.; Compton, R.N. "Multiphoton Ionization Photoelectron and Ion Kinetic Energy Spectra," 12th Int. Conf. Physics of Electronic and Atomic Collisions, Gatlinburg, TN, July 15-21,1981

828
Miller, J.C.; Compton, R.N. "Multiphoton Ionization Photoelectron Spectroscopy," Am. Chem. Soc. Annu. Meet., Kansas City, MO, Sept.12-16,1982

829
Miller, J.C.; Compton, R.N. "Multiphoton Ionization Photoelectron Spectroscopy of Molecules," Am. Chem. Soc. Meet., Atlanta, GA, April 3, 1981

830
Miller, J.C.; Compton, R.N.; Cooper, C.D. "Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases," 13th Annu. Meet. Div. Electron Atomic Phys., New York, Dec.3-5,1981

831
Miller, J.C.; Compton, R.N.; Cooper, C.D. "Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases," Opt. Soc. Am. Meet. Laser Techniques for Extreme Ultraviolet Spectroscopy, Boulder, CO, Mar.8-10,1982

832
Myrick, T.E.; Berven, B.A. "Determination of Radionuclide Concentrations in Surface Soil and External Gamma-Ray Exposure Rates in the United States," 26th Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

833
Myrick, T.E.; Blair, M.S.; Deane, R.W.; Loy, E.T.; Shipaugh, W.H. "An Updated System for Mobile Gamma-Ray Scanning," 27th Annu. Health Phys. Soc. Meet., Las Vegas, June 27-July 1,1982

834
Myrick, T.E.; Owens, M.E.; Blair, M.S. "A Mobile Laboratory System for Use in Ground-Level Gamma-Ray Scanning," 26th Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

835
Niemczyk, S.J. "Subsurface Factors Affecting Meltdown Accident Consequences," Am. Nucl. Soc. Winter Meet., Washington, DC, Nov.14-19,1982

836
Niemczyk, S.J. "Uncertainties in LWR Accident Source Term Estimation," Am. Nucl. Soc. Winter Meet., Washington, DC, Nov.14-19,1982

837
Niemczyk, S.J.; McDowell-Boyer, L.M. "Source Term Assumptions for Realistic Accident Analyses," Am. Nucl. Soc. Int. Meet. Thermal Nuclear Reactor Safety, Chicago, Aug.29-Sept.2,1982

838
Owens, M.E.; Berven, B.A.; Perdue, P.T. "Measurement of Kr-85 Concentrations in Air Using a Cryogenic Sampler," 25th ORNL Conf. Analytical Chemistry in Energy Technology, Gatlinburg, TN, Oct.6-8,1981

839
Owens, M.E.; Berven, B.A.; Perdue, P.T. "Measurement of Kr-85 Concentrations in Air Using a Cryogenic Sampling Technique," Am. Nucl. Soc. Winter Meet., San Francisco, Nov.29-Dec.4,1981

840
Pace, M.O.; Adcock, J.L.; Frees, L.C.; Christophorou, L.G. "Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

841
Pace, M.O.; Adcock, J.L.; Frees, L.C.; Christophorou, L.G. "Gas Insulation Improvement by Coating Contaminating Particles," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

842
Pace, M.O.; Chan, C.C.; Christophorou, L.G. "Ternary Gas Mixtures for High Voltage Industrial Insulation," Electrical/Electronics Insulation Conf., Chicago, Oct.19-22,1981

843
Pal, R.Y.; Christophorou, L.G.; Fatheddin, A. "Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen, Sulfur Hexafluoride/Nitrogen/Perfluorocarbon," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

844
Painter, L.R.; Hamm, R.N.; Williams, M.W.; Arakawa, E.T.; Birkhoff, R.D. "Optical Properties of Molecular Liquids," 29th Annu. Meet. Radiat. Res. Soc., Minneapolis, Minn.,May 31–June 4, 1981

845
Parzyck, D.C. "Health Related Concerns in Energy Development," Annu. Meet. Am. Rural Health Assoc., Workshop Health and Institutional Impacts of Energy Development, Brainerd, MN, June 13,1981

846
Payne, M.G. "Applications of Resonance Ionization Spectroscopy in Atomic and Molecular Systems," ORAU Traveling Lecture, Drexel University, Philadelphia, PA, November 12, 1981.

847
Payne, M.G. "Collective Effects on Multiphoton Ionization," Chemical Physics Semin., ORNL, February 1, 1982.

848
Payne, M.G. "Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules," Gordon Research Conference, New London, NH, July 12–16, 1982.

849
Payne, M.G. "Physical Basic of RIS," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1–5,1981

850
Payne, M.G. "Resonance Ionization Studies of Atomic and Simple Molecular Systems," Health and Safety Research Division Information Meeting, ORNL, October 7, 1981

851
Payne, M.G. "RIS for Diatomic Molecules," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1–5,1981

852
Payne, M.G. "Use of RIS Spectroscopy for Sensitive Detection of Atoms and Molecules," Southeastern Section of the American Physical Society, New Orleans, LA, November 24–25, 1981.

853
Payne, M.G.; Baker, H.C. "Two-State Models of Radiative Collisions and Related Ionization Effects," Lasers '81 Conf., New Orleans, Dec.14–18,1981

854
Payne, M.G.; Hurst, G.S. "One-Atom Detection and Statistical Studies with Resonance Ionization Spectroscopy," Int. School of Quantum Electronics: Analytical Laser Spectroscopy (A NATO Advanced Study Institute), Erice, Sicily, September 23–October 3, 1982

855
Payne, M.G.; Hurst, G.S. "Theory of Resonance Ionization Spectroscopy," Int. School of Quantum Electronics: Analytical Laser Spectroscopy (A NATO Advanced Study Institute), Erice, Sicily, September 23–October 3, 1982

856
Payne, M.G.; Hurst, G.S. "Weak Interaction Studies Using Resonance Ionization Spectroscopy," Int. School of Quantum Electronics: Analytical Laser Spectroscopy (A NATO Advanced Study Institute), Erice, Sicily, September 23–October 3, 1982

857
Peelle, E.B.; Carnes, S.A.; Copenhaver, E.D.; Reed, J.H.; Soderstrom, E.J. "Public Concerns on Nuclear Waste Siting," Annu. Conf. Atomic Industrial Forum, Fuel Cycle Policy Sess., San Francisco, Dec.2,1981

858
Perdue, P.T.; Haywood, F.F. "Integrated Air Sampling for Radon Daughters in Mines Using the Cryogenic Air Sampling Method," Int. Conf. Radiation Hazards in Mining: Control Measurement, and Medical Aspects, Golden, CO, Oct.4,1981

859
Pleasant, J.C.; McDowell-Boyer, L.M.; Killough, G.G. "RAGTIME: A Time-Dependent Model for Radionuclides in Agricultural Systems," Environmetrics 81, Washington, DC, Apr.8-10,1981

860
Post, W.M.; DeAngelis, D.L.; Travis, C.C. "Mutualistic Interactions among Many Populations," Am. Assoc. Adv. Sci. Annu. Meet., Washington, DC, Jan.3-8,1982

861
Ritchie, R.H. "A Core-Plasma Model of Charged Particle Track Structure in Insulators," Symp. on Ion-Induced Desorption of Biomolecules from Surfaces, Uppsala, Sweden, June 16-19, 1981 (invited)

862
Ritchie, R.H. "A Density Functional Calculation of Energy Loss by Slow Ions in Solids," Theory of Condensed Matter Seminar, Cavendish Laboratory, Cambridge, England, July 30, 1981 (invited)

863
Ritchie, R.H. "Atom-Surface Phonon Scattering," Physics and Chemistry of Solids Seminar, Cavendish Laboratory, Cambridge, England, May 20, 1981

864
Ritchie, R.H. "Energy Losses by Charged Particles in the Bulk and at the Surface of Condensed Matter," Symp. on Ion-Induced Desorption of Biomolecules from Surfaces, Uppsala, Sweden, June 16-19, 1981 (invited)

865
Ritchie, R.H. "Models of High Energy Sputtering and Track Registration in Insulators," Solid State Semin., Cavendish Laboratory, Cambridge, England, June 3, 1981

866
Ritchie, R.H. "Resonant Coherent Excitation of Channeled Ions," Daresbury Laboratory, Daresbury, England, September 21, 1981 (invited)

867
Ritchie, R.H. "The Interaction of Charged Particles with Condensed Matter," 15th Annu. Radiological Physics Contrators' Meet., Gettysburg, PA, May 4-6,1982

868
Ritchie, R.H.; Claussen, C. "Charged Particle Track Structure in Insulators," US/Japan Semin. Charge States and Dynamic Screening of Swift Ions in Solids, Honolulu, Jan.22-29,1982

869
Ritchie, R.H.; Claussen, C. "Quantitative Aspects of Charged Particle Track Structure in Insulators," 8th Symp. Microdosimetry, Juelich, Federal Republic of Germany, Sept.27-Oct.1,1982

870
Ritchie, R.H.; Ferrell, T.L. "Particulates and Surface Physics," Prog. Rev. The Physics and Chemistry of Energy-Related Atmospheric Pollution, Harper's Ferry, WV, Apr.21-23,1981

871
Ritchie, R.H.; Ferrell, T.L.; Marusak, J.R. "The Image Potential of a Tunneling Electron," Workshop on the Physics of Submicron Structures, University of Illinois, Urbana, Illinois, June 28-30, 1982

872
Rogers, C.W.; Keller, J.M.; Warmack, R.J. "Selection of a Multi-User Operating System for the Laboratory," Spring Decus U.S. Symp., Atlanta, May 10-14,1982

873
Ruiz, R.A. "SCAN: An Image Processing and Analyzing System," Winter Meet. Assoc. Comput. Mach., Mid-Southeast Chapter, Chattanooga, TN, Jan.28-29,1982

874
Ruiz, R.A.; Fields, D.E. "The Development and Application of an Image Analyzing and Processing System," Assoc. Comput. Mach. Reg. Conf., Knoxville, TN, Apr.1-3,1982

875
Sarma, R.H.; Sarma, M.H.; Wagner, B.J.; Grunberger, D.; Santella, R.M.; Broyde, S.; Hingerty, B.E. "Structures of DNA and Its Drug Complexes in Solution," Int. Symp. Structure and Dynamics of Nucleic Acids and Proteins, La Jolla, CA, Sept.5-9,1982

876
Sauers, I.; Christophorou, L.G. "Spark Decomposition Studies of Dielectric Gas Mixtures," 7th Int. Conf. Gas Discharges and Their Applications, London, Aug.31-Sept.3,1982

877
Sauers, I.; Ellis, H.W.; Freca, L.C.; Christophorou, L.G. "Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures," 3rd Int. Symp. Gaseous Dielectrics, Knoxville, TN, Mar.7-11,1982

878
Sauers, I.; Freca, L.C.; Ellis, H.W.; Christophorou, L.G. "Mass Identified Ions from Spark Discharge of Sulfur Hexafluoride in the Pressure Range 5-67 kPa," Inst. Electr. Electron. Eng. Int. Conf. Plasma Science, Santa Fe, NM, May 18-20,1981

879
Schuresko, D.D.; Griffin, G.D. "Aryl Hydrocarbon Mono-Oxygenase Induction in Hamster Embryonic Cells Exposed to Fossil Synfuel Products," 8th Conf. Analytical Cytology and Cytometry, Portsmouth, NH, May 19-25,1981

880
Schuresko, D.D.; Griffin, G.D. "Aryl Hydrocarbon Mono-Oxygenase Induction in Hamster Embryonic Cells Exposed In-Vitro to Fossil Synfuel Products," 6th Int. Symp. Polynuclear Aromatic Hydrocarbons, Battelle Columbus Laboratories, Columbus, OH, Oct.27-29,1981

881
Schuresko, D.D.; Griffin, G.D.; MacLeod, M.C.; Selkirk, J.K. "Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products," 6th Int. Symp. Polynuclear Aromatic Hydrocarbons, Battelle Columbus Labs., Oct.27-29,1981

882
Schwarz, G.; Hoffman, F.O. "Imprecision in Dose Predictions," Jt. Radiat. Prot. Meet., German-Swiss Fachverband fur Strahlouschutz Annu. Meet., Lausanne, Switzerland, Sept.30-Oct.2,1981

883
Sims, C.S.; Gilley, L.W. "Nuclear Engineering Training Using the Health Physics Research Reactor," Winter Meet. Am. Nucl. Soc., San Francisco, Nov.29-Dec.4,1981

884
Siomos, K.; Christophorou, L.G. "Laser-Induced Multiphoton Ionization and Photophysical Processes of Molecules in Liquids," 12th Int. Quantum Electronics Conf., Munich, Federal Republic of Germany, June 22-25,1982

885
Siomos, K.; Christophorou, L.G. "Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique," 7th Int. Conf. Conduction and Breakdown in Dielectric Liquids, West Berlin, July 27-31,1981

886
Siomos, K.; Kouroukla, G.A.; Christophorou, L.G. "Electron Attachment as a Probe of Photoionization Processes in Liquid Media," 2nd Int. Swarm Semin., ORNL, July 22-23,1981

887
Smith, D.H.; Bouldin, D.W.; Christophorou, L.G. "DC Dielectric Strengths of Fluorinated Benzenes and the Stored Energy Theory," 7th Int. Conf. Conduction and Breakdown in Dielectric Liquids, Berlin, July 27-31,1981

888
Spyrou, S.M.; Sauers, I.; Christophorou, L.G. "Fragmentation of Saturated Perfluorocarbon Gas Dielectrics under Low Energy Electron Impact," 7th Int. Conf. Gas Discharges and Their Applications, London, Aug.31-Sept.3,1982

889
Srivastava, P.C.; Knapp, F.F., Jr. "Synthesis of Radiolabeled 5-(E-Iodovinylalkyl)barbituric Acid Analogues as Potential Cerebral Blood Perfusion Agents," Am. Chem. Soc. Annu. Meet., Kansas City, MO, Sept.12-17,1982

890
Stockdale, J.A.D. "Fragmentation and Internal Excitation of Uranium Hexafluoride Ions in Collisions with Noble Gas Atoms," 34th Annu. Gaseous Electronics Conf., Boston, Oct.20-23,1981

891
Stockdale, J.A.D. "Photochemical Images of New York City and East Tennessee," Chemical Physics Semin., ORNL, May 18, 1981

892
Stockdale, J.A.D.; Anuta, B.K. "Inelastic Collisions of Hexafluoride Negative Ions with Atoms and Molecules," 12th Int. Conf. Physics of Electronic and Atomic Collisions, Gatlinburg, TN, July 15-21,1981

893
Stockdale, J.A.D.; Compton, R.N.; Reinhardt, P.W. "Production and Excitation of Silver Polyfluoride Ions," 13th Annu. Div. Electron At. Phys. Meet., New York, Dec.3-5,1981

894
Swaja, R.E.; Greene, R.T. "Intercomparison of Nuclear Criticality Accident Dosimetry Systems," 26th Annu. Meet. Health Phys. Soc., Louisville, June 21-26,1981

895
Swaja, R.E.; Greene, R.T. "Neutron and Gamma Attenuation Characteristics of Various Shields during Nuclear Criticality Accidents," Winter Meet. Am. Nucl. Soc., San Francisco, Nov.29-Dec.4,1981

896
Swaja, R.E.; Sims, C.S. "Dosimetry Training Programs at Oak Ridge National Laboratory," Winter Meet. Am. Nucl. Soc., Washington, DC, Nov.14-19,1982

897
Swaja, R.E.; Sims, C.S. "Neutron and Gamma Dose Measurements during Simulated Nuclear Accidents," 27th Annu. Meet. Health Phys. Soc., Las Vegas, June 27-July 1,1982

898
Swaja, R.E.; Sims, C.S. "Nuclear Accident Dosimetry Intercomparison Studies at the Health Physics Research Reactor," Annu. Meet. Aust. Radiat. Prot. Soc., Sydney, Australia, Aug.24–27,1981

899
Swaja, R.E.; Sims, C.S. "Performance of Neutron and Gamma Personnel Dosimetry in Mixed Radiation Fields," Annu. Meet. Aust. Radiat. Prot. Soc., Sydney, Australia, Aug.24–27,1981

900
Swaja, R.E.; Sims, C.S. "Performance of Neutron and Gamma Personnel Dosimetry in Mixed Radiation Fields," Int. Symp. Application of the Dose Limitation System, Madrid, Oct.19–23,1981

901
Swaja, R.E.; Sims, C.S. "Performance of Nuclear Criticality Accident Dosimetry Systems," Annu. Meet. Am. Nucl. Soc., Miami Beach, FL, June 7–12,1981

902
Swaja, R.E.; Sims, C.S. "Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory," 3rd Int. Symp. Soc. Radiol. Prot., Inverness, Scotland, June 6–11,1982

903
Swaja, R.E.; Sims, C.S. "Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory," 3rd Int. Symp. Soc. Radiation Prot., Inverness, Scotland, June 6–11,1982

904
Todd, P.J.; Warmack, R.J. "Calculated Angular Distributions of Fragment Ions from Polyatomic Ion Collisions," 20th Annu. Conf. Mass Spectrometry and Allied Topics, Honolulu, June 6–11,1982

905
Tode, A.S.; Hiromoto, G.; Turner, J.E.; Wright, H.A.; Hamm, R.N.; Rustgi, M.L. "Monte Carlo Calculations of Initial Energies of Electrons Produced in Water by Photons with Energies up to 1 GeV," Health Phys. Soc. Annu. Meet., Louisville, June 22–26,1981

906
Tode, A.S.; Turner, J.E.; Hamm, R.N.; Wright, H.A.; Poston, J.W.; Chiles, M.M. "A Study of Cylindrical, Energy–Proportional Pulse–Height Detectors for Measuring Microdosimetric Quantities," 8th Symp. Microdosimetry, Juelich, Federal Republic of Germany, Sept.27–Oct.1,1982

907
Travis, C.C. "Health Risks from Alternative Energy Technologies," Weld. Test. Technol. Natl. Energy Conf. (WATTec), Knoxville, TN, Feb.20,1981

908
Travis, C.C.; Hoffman, F.O. "Aspects of Uncertainty Analysis in Accident Consequence Modeling," Am. Nucl. Soc. Meet., Miami Beach, FL, June 7–12,1981

909
Travis, C.C.; Meyer, H.R.; Etnier, E.L. "Health and Safety Impacts of Residential Wood Heat," Annu. Meet. Am. Nucl. Soc., Los Angeles, June 6–11,1982

910
Travis, C.C.; Watson, A.P.; McDowell–Boyer, L.M.; Cotter, S.J.; Randolph, M.L.; Fields, D.E. "Natural and Technologically Enhanced Sources of Radon," Am. Nucl. Soc. Meet., San Francisco, Nov.29–Dec.4,1981

911
Travis, C.C.; White, L.W. "Parameter Identifiability for Partial Differential Equations," 10th World Congr. Systems Simulation and Scientific Computation, Montreal, Aug.8–13,1982

912
Turner, J.E. "Radioactivity," ETCHPS-NRRPT Training Course, Oak Ridge, Tennessee, August 13, 1981

913
Turner, J.E.; Lee, E.H.; Jacobsen, K.B.; Christie, N.T.; Williams, M.W.; Hoeschele, J.D. "Investigation of Correlations between Chemical Parameters of Metal Ions and Acute Toxicity in Mice and Drosophila," Life Sciences Symp., Hanford, CA, Richland, WA, Oct.4-8,1981

914
Turner, J.E.; Magee, J.L.; Hamm, R.N.; Chatterjee, A.; Wright, H.A.; Ritchie, R.H. "Early Events in Irradiated Water," Radiat. Res. Soc. 29th Annu. Scientific Meet., Minneapolis, May 31-June 4,1981

915
Turner, J.E.; Oakes, T.W.; Eldridge, J.S.; Sordi, G.M.A.A. "Radiological Analysis of Ash from 1980 Eruptions of Mount St. Helens," Health Phys. Soc. Annu. Meet., Louisville, June 21-26,1981

916
Turner, J.E.; Paretzke, H.G.; Hamm, R.N.; Wright, H.A.; Ritchie, R.H. "Comparison of Electron Transport Calculations for Water in the Liquid and Vapor Phases," 8th Symp. Microdosimetry, Juelich, Federal Republic of Germany, Sept.27-Oct.1,1982

917
Turner, J.E.; Paretzke, H.G.; Hamm, R.N.; Wright, H.A.; Ritchie, R.H. "Effects of Phase on Electron Transport in Water," Workshop on the Interface between Radiation Chemistry and Radiation Physics, Argonne, National Laboratory, September 9-10, 1982

918
Van Heesen, S.D.; Cowser, K.E.; Cushman, R.M.; Dreibelbis, W.G.; Griest, W.H.; Klein, J.A.; Lorimer, F.W.; Meyer, H.R.; Strand, R.H. "Health and Environmental Assessment of Low BTU Gasification," 5th Miami Int. Conf. Alternative Energy Sources, Miami Beach, FL, Dec.13-15,1982

919
Vo-Dinh, T. "A New Passive Dosimeter for Monitoring Personnel Exposure to Polycyclic Aromatic Vapors," Annu. Am. Chem. Soc. Meet., New York, Aug.23-28,1981

920
Vo-Dinh, T. "A Vapor Dosimeter for Air Pollution Analysis," U.S. Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Research Triangle Park, N.C., May 4 (1982)

921
Vo-Dinh, T. "Air Pollution: The Application of Simple Luminescence Techniques for Monitoring Polynuclear Aromatic Pollutants," 184th Am. Chem. Soc. Natl. Meet., Symp. Identification and Analysis of Organic Pollutants in Air, Kansas City, MO, Sept.12-17,1982

922
Vo-Dinh, T. "Air Pollution: The Application of Simple Luminescence Techniques," Symp. on Identification and Analysis of Organic Pollutants in Air, Kansas City, Missouri, 1982

923
Vo-Dinh, T. "Applicability of Room Temperature Phosphorimetry to Real Time Monitoring of Toxic Gas," Seminar at MDA Scientific Inc., Glenview, IL, September 25 (1981)

924
Vo-Dinh, T. "Development of a New Passive Dosimeter for Polynuclear Aromatic Vapors," Natl. Symp. Monitoring Hazardous Organic Pollutants in Air, Raleigh, NC, Apr.28-May 1,1981

925
Vo-Dinh, T. "Development of a New Passive Dosimeter for Polynuclear Aromatic Vapors," EPA Natl. Symp. on Monitoring Hazardous Organic Pollutants in Air, Raleigh, N.C., April 28-May 1, 1981

926
Vo-Dinh, T. "Evaluation of a New Passive Dosimeter for Polyaromatic Vapors," EPA Symp. Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources, Research Triangle Park, NC, May 4-7,1982

927
Vo-Dinh, T. "Field Measurements with the Personal Dosimeter at the H-Coal Pilot Plant," H-Coal Life Sciences Program Review Meeting, Oak Ridge, Tennessee, Sept. 17 (1982)

928
Vo-Dinh, T. "New Approaches in Luminescence Spectroscopy," U.S. Environmental Protection Agency, Environmental Monitoring System Laboratory, Research Triangle Park, N.C., May 1 (1981)

929
Vo-Dinh, T. "New Development in Spectroscopic Techniques and Instrumentation," Seminar at Honeywell, Inc., Avionics Division, Clearwater, Florida, April 5-6, 1981

930
Vo-Dinh, T. "Passive PNA Vapor Monitor," Environmental Instrumentation Workshop, Oak Ridge National Laboratory, Oak Ridge, TN - May 21, 22 (1981)

931
Vo-Dinh, T. "Rapid Screening Luminescence Techniques for Trace Organic Analysis," Am Soc. Test. Mater. Symp. New Directions in Molecular Luminescence, Atlantic City, NJ, Mar.1982

932
Vo-Dinh, T. "Recent Developments in Synchronous Luminescence Spectroscopy," Univ. of Tennessee Analytical Chemistry Colloq., Knoxville, TN, May 28,1982

933
Vo-Dinh, T. "Simple Luminescence Techniques Simplify Air Analysis," Instrum. Soc. Am. Symp., Ambient Air Monitoring, St. Louis, Mar.23,1981

934
Vo-Dinh, T. "Synchronous Luminescence Spectroscopy: Principle and Application," East. Analytical Symp., New York, Nov.11-18,1982

935
Vo-Dinh, T.; Ferrell, T.L.; Callcott, T.A. "Recent Developments in Spectroscopic Detection of Organic Chemicals: Surface-Enhanced Raman and Luminescence Spectroscopies," Colloq., Chemical Systems Lab., Aberdeen Proving Grounds, MD, May 19,1982

936
Vo-Dinh, T.; Miller, G.H. "A Simple Vapor Monitor for Detecting Quinoline, an Important Carcinogen," Pittsburgh Conf./Expo. Analytical Chemistry and Applied Spectroscopy, Atlantic City, NJ, Mar.8-13,1982

937
Vo-Dinh, T.; Miller, G.H. "A Simple Vapor Monitor for Detecting Quinoline, an Important Carcinogen," Pittsburgh Conf./Expo. Analytical Chemistry and Applied Spectroscopy, Atlantic City, NJ, Mar.8-13,1982

938
Warner, G.G.; Eckerman, K.F. "Computer-Simulated Cervical Cancer Therapy and Absorbed Doses to Nearby Organs," Annu. Meet. Health Phys. Soc., Las Vegas, June 28-July 2,1982

939
Washburn, L.C.; Sun, T.T.; Byrd, B.L.; Callahan, A.P. "Resolution of C-11-DL-Valine by High-Performance Liquid Chromatography," Soc. Nucl. Med. Meet., Las Vegas, June 15-19,1981

940
Watson, A.P. "Energy Analysis of the Coal Fuel Cycle in an Appalachian Coal County," Presentation for Appalachian Week, Vanderbilt University. Sponsored by Vanderbilt Center for Health Services, Vanderbilt University, Nashville, TN, February 11, 1982

941
Watson, A.P. "Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County," Int. Symp. Health Impacts of Different Sources of Energy, WHO/UNEP/IAEA, Nashville, TN, June 22-26,1981

942
Watson, A.P. "Health and Safety Implications of Mineral Development in Western North Carolina," North Carolina State University, Agricultural Extension CRD 1-82, Minerals Pkt. #6 (March 1982)

943
Watson, A.P. "Introduction: Health and Safety Regulatory Issues Panel," Moon Shine to Motor Fuel: A Workshop on Regulatory Compliance for Fuel Alcohol Production, Atlanta, Mar.3-4,1981

944
Watson, A.P. "Occupational and Community Health and Safety Implications of Mineral Development in Western North Carolina," Conf. on Mineral Development in Western North Carolina, Current Status, Future Possibilities and Probably Impacts, University of North Carolina at Asheville, November 13-14, 1981

945
Watson, A.P. "Workplace Experience and Job Title Profiles of American Coal Miners Suffering Accidental Injury and Death," 2nd Int. Symp. Training in the Prevention of Occupational Risks in the Mining Industry, Washington, DC, Nov.3-8,1981

946
Watson, A.P.; Baxter, P.; Edwards, R. "Health, Safety and General Welfare Problems Associated with Abandoned Coal Mine Lands," Am. Rural Health Assoc. 6th Annual Institute, The Village at Smuggler's Notch, Jeffersonville, Vermont, June 13, 1982

947
Watson, A.P.; Etnier, E.L.; Walsh, P.J. "Health and Safety Issues of Alternate Energy Systems," Am. Nucl. Soc. Exec. Conf. on Alternate Energy Sources for Electrical Power, Dunfey Hyannis, Hyannis, Massachusetts, October 4-7, 1981

948
Watson, A.P.; Smith, J.G. "Occupational Safety and Health Aspects of Commercial-Scale Fuel Ethanol Production," Symp. Alternative Energy Sources and Technology, San Francisco, CA, May 20-22,1981

949
Watson, A.P.; White, C.L. "Workplace Injury Experience of Female Coal Miners in the United States," Focus on Women and Health, Virginia Univ., Morgantown, WV, Sept.30-Oct.2,1982

950
Watson, A.P.; White, C.L. "Workplace Injury Experience of Female Coal Miners in the United States, 1978-1980," 4th Annual Conference on Women Miners, Kentucky Wesleyan College, Owensboro, Kentucky, June 26, 1982

951
Watson, E.E.; Cristy, M. "A Model of the 3-month Pregnant Woman for Radiation Dose Estimation," Soc. Nucl. Med. Annu. Meet., Miami, Florida, June 1982

952
Watson, S.B.; Eckerman, K.F.; Ford, M.R. "Comparison of Secondary Limits for Occupational Exposure: ICRP Publication 30 vs Publication 2," Annu. Health Phys. Soc. Meet., Las Vegas, June 27-July 1,1982

953
Watson, S.B.; Fore, C.S.; Ford, M.R. "ORNL-ICRP Data Base," Health Phys. Soc. Annu. Meet., Louisville, June 21-26,1981

954
Wand, J.M.; Drew, J.M.; Duelfer, T.; Wagner, H.N., Jr.; Knapp, F.F., Jr. "Sn-117m As a Potential Red Bloud Cell Label," Soc. Nucl. Med. Meet., Las Vegas, June 15-19,1981

955
Willis, R.D.; Craig, H. "Oceanic Studies with Tracer Techniques," Symp. Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1-5,1981

956
Willis, R.D.; Craig, H.; Chen, C.H.; Hurst, G.S.; Lehmann, B.E.; Payne, M.G. "New Developments in the Detection of Heavy Rare Gas Isotopes," Am. Geophys. Union Fall Meet., San Francisco, Dec.7-11,1981

957
Wiseman, P.J. "Comparison of Observed and Predicted Sodium Aerosol Concentrations and Depositions," Collegiate Div. of the Tennessee Academy of Science, Lincoln Memorial College, Harrogate, TN, Apr.1982

958
Witherspoon, J.P. "Comparative Radiological Impact from Fossil Fuel and Nuclear Power Plants," Weld Test. Technol. Natl. Energy (WATTec) Conf., Knoxville, TN, Feb.20,1981

959
Wright, H.A. "Calculations in Support of Pion Cancer Radiotherapy," Tri-University Nuclear Laboratory Duke University, September 15, 1981 (invited)

960
Wright, H.A. "Surface and Submicron Physics," 15th Annu. Radiological Physics Contractors Meet., Gettysburg, PA, May 4-6,1982

961
Wright, H.A.; Paretzke, H.G.; Turner, J.E.; Hamm, R.N.; Ritchie, R.H. "Calculations of Electron Transport in Water - Liquid and Vapor. 2. Yields and Energy Deposition," Radiat. Res. Soc. 29th Annu. Sci. Meet., Minneapolis, May 31-June 4,1981

962
Wright, H.A.; Turner, J.E.; Hamm, R.N.; Ritchie, R.H.; Magee, J.L.; Chatterjee, A. "Early Physical and Chemical Events in Electron Tracks in Liquid Water," Workshop on the Interface between Radiation Chemistry and Radiation Physics, Argonne National Laboratory, September 9-10, 1982

963
Wright, H.A.; Turner, J.E.; Hamm, R.N.; Ritchie, R.H.; Magee, J.L.; Chatterjee, A. "Physical and Chemical Evolution of an Electron Track in Liquid Water," 8th Symp. Microdosimetry, Juelich, Federal Republic of Germany, Sept.27-Oct.1,1982

964
Yalcintas, M.G. "Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts," Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982

965
Yalcintas, M.G. "Risk Estimates for Medical Diagnostic Radiation Procedures," Am. Assoc. Adv. Sci. Annu. Meet., Washington, DC, Jan.3-8,1982

966
Yasuda, T.; Knapp, F.F., Jr.; Okada, R.D.; Elmaleh, D.R.; McKusick, K.A.; Kopiwoda, S.Y.; Strauss, H.W. "Extraction Fraction of Te-123m-9-Telluraheptadecanoic Acid by Hypertensive and Hypoxic Canine Hearts," Soc. Nucl. Med. Meet., Las Vegas, June 15-19,1981

967
Young, J.P. "RIS for Analytical Chemistry," Symp. on Resonance Ionization Spectroscopy and Its Applications, Gatlinburg, TN, June 1-5, 1981.

968
Young, J.P.; Hurst, G.S.; Kramer, S.D. "Analytical Applications of Resource Ionization Spectroscopy," Fed. Anal. Chem. Spectrosc. Soc., Philadelphia, Sept.19-24,1982 Sept.19-24,1982

969
Zeighami, E.A. "Epidemiologic Measures of Risk and Benefit of Diagnostic X-Ray Procedures," Am. Assoc. Adv. Sci. Annu. Meet./Symp., Washington, DC, Jan.3-8,1982

970
Zeighami, E.A. "The Healthy Worker Effect - An Examination of Its Meaning for Comparative Measures of Risk," Am. Public Health Assoc. Annu. Meet., Los Angeles, Nov.1-5,1981; Univ. of California, Los Angeles, Mar.16,1981

971
Zeighami, E.A. "The Measurement of Excess Mortality Risk in Cohorts Exhibiting a Healthy Worker Effect," Soc. Epidemiol. Res. Annu. Meet., Snowbird, UT, June 17-19,1981

972
Zeighami, E.A.; Morris, M.D.; Calle, E.E. "Arteriosclerotic Heart Disease, Stroke, and Water Mineralization among Wisconsin Farmers," Soc. Epidemiol. Res., Cincinnati, June 16-18,1982

Appendix H. Author Index