

# Добро пожаловать

Welcome

SAND2011-3793C



# Ион методам анализа луча

## Ion Beam Analysis Techniques

### TECHNIQUE

### SCHEMATIC

### EXAMPLE ANALYSIS

#### SPECTRUM

### ELEMENTS

#### DETECTABLE

### SENSITIVITY

#### part per million

### DEPTH

#### RESOLUTION

### ANALYSIS

#### RANGE

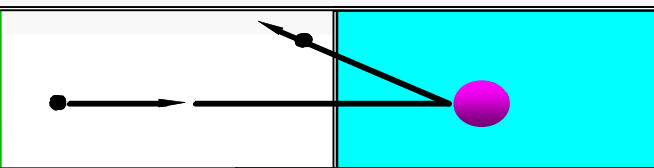
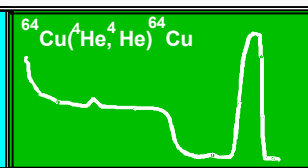
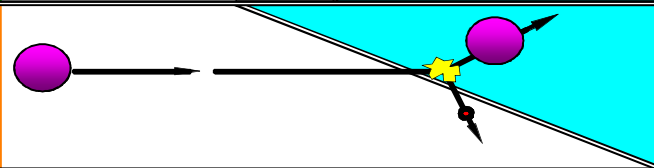
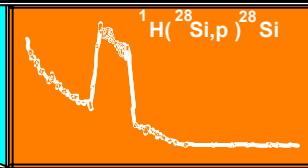
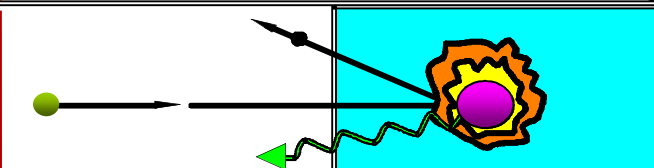
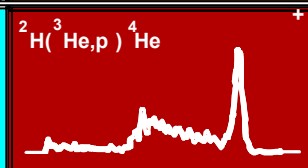
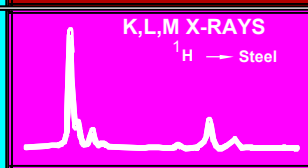
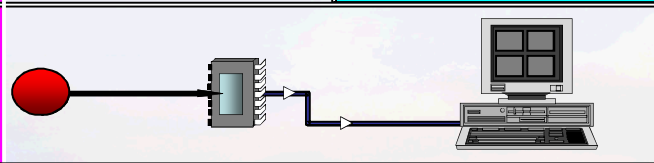
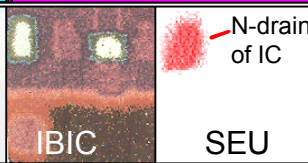
Target (Inc.,Det.) Residual

(ATOMIC #)

million

(nm)

(um)

|                               |                                                                                    |                                                                                     |                                                    |                                                                                        |          |        |
|-------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------|----------|--------|
| <b>RBS</b>                    |   |   | 4 - 94                                             | 10 - 1000                                                                              | 2.5 - 50 | 1 - 50 |
| <b>ERD</b>                    |   |   | 1 - 8                                              | 100 - 1000                                                                             | 2 - 100  | .1 - 1 |
| <b>NRA</b>                    |   |   | 1 - 9                                              | .1 - 1000                                                                              | 5 - 500  | 1 - 10 |
| <b>PIXE<br/>PIGE</b>          |   |   | 13 - 94                                            | 1 - 100                                                                                |          | 1 - 50 |
| <b>SEU<br/>IBIC<br/>INSIM</b> |  |  | IBIC/SEU<br>MAPS rad<br>Induced IC<br>malfunctions | 1 - 80<br>MeV/mg/cm <sup>2</sup><br>10 <sup>19</sup> 1 MeV eq.<br>n/cm <sup>2</sup> /s |          | 5 - 50 |

RBS=Rutherford Backscattering Spectrometry

ERD=Elastic Recoil Detection

NRA=Nuclear Reaction Analysis

PIXE/PIGE=Proton Induced X-ray/Gamma-ray Emission

SEU=Single Event Upset

IBIC=Ion Beam Induced Charge

INSIM=Ion Neutron SIMulation

Sandia поддерживает доктор Gurbich, Институт физики и энергетики, г. Обнинск, в развитии этого важного программного обеспечения ядерной реакции.

Sandia supported Dr. Gurbich, Institute of Physics and Power Engineering, Obninsk, in the development of this important nuclear reaction software.

 **SigmaCalc**

This service provides evaluated (recommended) differential cross sections for Ion Beam Analysis

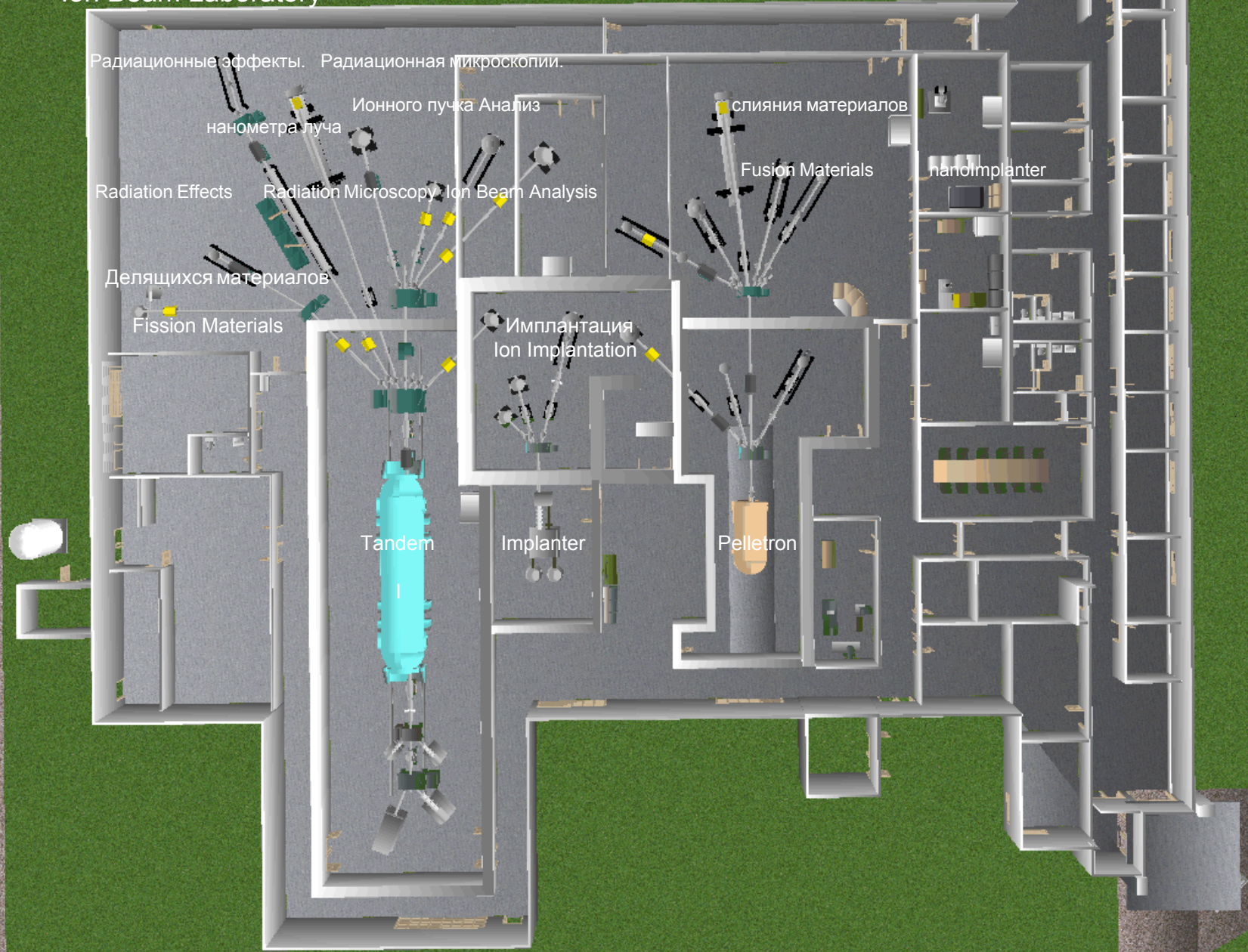
| Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Element | Reaction                                                                                                                                                                                                                                                                                                                | Scattering Angle | About                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------|
| <input type="checkbox"/> R33<br><b>Energy</b><br><input checked="" type="radio"/> keV<br><input type="radio"/> MeV<br><br><b>Cross section</b><br><input checked="" type="radio"/> RTR<br><input type="radio"/> mb/sr(lab)<br><input type="radio"/> mb/sr(c.m.)<br><input type="radio"/> b/sr(lab)<br><input type="radio"/> b/sr(c.m.)<br><br><b>Delimiter</b><br><input checked="" type="radio"/> Tab<br><input type="radio"/> Space<br><input type="radio"/> Comma<br><input type="radio"/> Colon<br><input type="radio"/> Semicolon | O-16    | <input type="radio"/> (p,p)<br><input checked="" type="radio"/> (α,α)<br><input type="radio"/> (α,p)<br><input type="radio"/> (d,d)<br><input type="radio"/> (d,p <sub>0</sub> )<br><input type="radio"/> (d,p <sub>1</sub> )<br><input type="radio"/> (d,α <sub>0</sub> )<br><input type="radio"/> (d,α <sub>1</sub> ) | 165              | <a href="#">General</a><br><a href="#">Evaluation</a><br><a href="#">Cross sections</a> |

Calculate

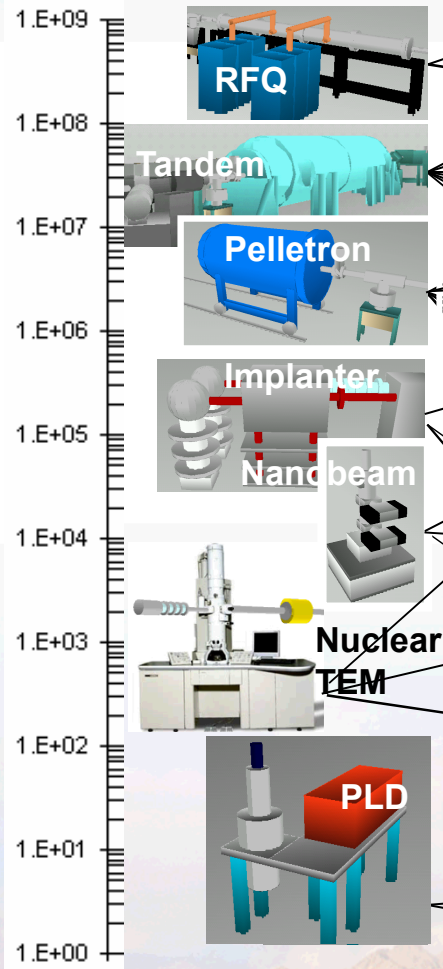
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Since August 2007 the SigmaCalc project has been supported by Sandia National Laboratories through ISTC.

# Ионного пучка лаборатории

Ion Beam Laboratory



Диапазоне энергий от IBL ускорители(eV)



Радиационная микроскопии  
Radiation Microscopy

Ядерная микроскопии  
Nuclear Microscopy

Радиационной физике  
Radiation Physics

Поддержка Производство  
Support Manufacturing

Дефект физики  
Defect Physics

Материалы анализа  
Materials Analysis

Деление /термоядерных исследований  
Fission/Fusion Materials Research

Плазма-поверхностного взаимодействия  
Plasma-Surface Interactions

Детекторы радиации  
Radiation Detectors

Коррозия науки  
Corrosion Science

Нанонаука  
Nanoscience

Металлургии  
Metallurgy