of the latex was intended primarily to demonstrate the radiation-induced emulsion polymerization techniques, the latex product obtained has attracted commercial interest. Samples of the radiation-produced latex product have been evaluated by both commercial laboratories and potential industrial users with the following general results:

1. Each evaluator was able to formulate a satisfactory paint from the latex.
2. The paint was generally acceptable and comparable in performance to that produced from good quality commercial latexes, with the exception that in all cases tested, the paint produced from the radiation-polymerized latexes remained glossier than conventional paint.
3. The latex produced by radiation polymerization had smaller particle sizes and higher molecular weight than that of conventional latexes.

This process is being evaluated by a number of commercial concerns.

Turning to another area of isotopes technology, radioisotope X-ray fluorescence analysis is being developed for a variety of applications, including industrial uses. This technique can be used to detect the presence and measure the amount of a number of chemical elements. It is based on the selective absorption of X rays by particular elements and the reemission and detection of a characteristic X-ray photon. Both X-ray machines and radioisotopes can be employed to generate the incident X rays. Radioisotopes offer the opportunity for development and use of portable equipment. The advantages of this already have been demonstrated in tests that successfully detected such elements as gold and silver in ores. The potential applications of this technique are being further explored. (Figure 7.)

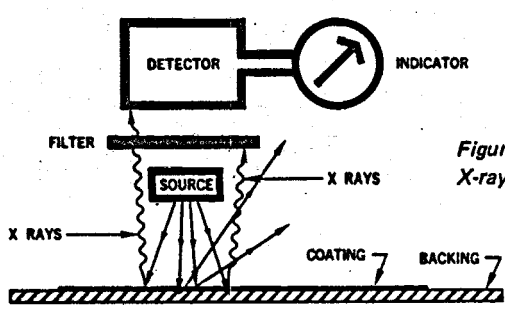

Figure 7. Principle of X-ray fluorescence.