



IAEA

International Atomic Energy Agency

Atoms for Peace

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Using radioisotope technology for natural resource exploration and exploitation

The challenge...

Radioisotope technologies play an important role in trouble-shooting, analysing and optimizing industrial processes. Better management and utilization of natural resources for industrial development through applications of radioisotope techniques will lead to economic and technical gains in the Asia Pacific region. The oil reservoir evaluation, petrochemical, chemical, mining, metallurgical, cement, mineral processing and wastewater treatment sectors are the main areas where radioisotope technology can be beneficial for on-line inspection, visualization, modelling analysis, data acquisition and processing techniques. This project has assisted 15 countries with improving the management of natural resources, conserving raw materials and energy and preserving the environment.

The project...

To improve the use of radioisotope technology for natural resource exploration and exploitation and for improving industrial process efficiency and product quality, the IAEA provided three regional training courses, one of which was Radiotracer Techniques for Leak Detection and Location of Underground Pipelines and Heat Exchangers. Over 60 people were trained regionally in radioisotope technologies. Expert missions were also carried out to provide seminars and training to the region.



Demonstration of the prompt gamma neutron activation analysis (PGNAA) technique in a coal mine.

The impact...

- End-user awareness of the benefits of radioisotope technology has increased and working partnerships with industry have been established in many participating countries.
- A brochure on Diagnosis of Industrial Reactors Using Radiotracer Techniques was also prepared for use by the countries involved.
- There have been a great many achievements from the participating countries including the use of the inter-well tracer test (IWTT) technique in the petroleum industry, which is now possible in China, Indonesia, Pakistan and Vietnam, as well as the gamma column scanning and leak detection technique in most of the participating countries for preventative maintenance in the petroleum industry.