



Contribution ID: 355

Type: Oral

Radiotracer and Sealed Source Technologies for Measurements in Industry

Thursday, 27 April 2017 11:45 (15 minutes)

The field of radiation technology came into being right at the discovery of radioactivity in 1896 by Henri Becquerel. In the coming years, several useful applications of radiation influenced the development of various radiation detector and analysis systems so that qualitative observations can be converted to precise measurements of energy, intensity and location of radiation. Some of these major applications include medical applications, industrial applications, high energy physics and nuclear security. Various means of development of artificial radionuclides and their transformation to useful radiotracers were explored keeping in view of these applications. Portable radionuclide/radiotracer generator systems were established for on-site production of radionuclides which have proved very successful in medical and industrial applications. The objective of this presentation is to give an overview of the applications that are driving radiation technology research for making useful measurements. Keeping in view of the substance involved in subject research field and my special field of research, the talk is focused on radiation technology for measurements in industrial applications. The principle and applications of radioisotopes for making measurements and troubleshooting in industry will be discussed. The development of various nucleonic control systems for on-line measurements in industry will be presented. Thin Layer Activation technique for wear measurements in industrial systems will become under discussion. In addition to this, radiotracer applications for industrial process optimization will also be covered. Modern day approach for diagnosing complex industrial systems (multiphase flow systems) using radiotracers in combination with Computational Fluid Dynamics (CFD) technique will also be elaborated during the presentation.

Key words: Radiation technology, application areas, radiation detection and measurement systems, industry, radiotracer, nucleonic control systems, CFD

Country/Organization invited to participate

Pakistan

Primary author: Mr UD DIN, Ghayas (Pakistan Institute of Nuclear Science and Technology [PINSTECH], Pakistan)

Presenter: Mr UD DIN, Ghayas (Pakistan Institute of Nuclear Science and Technology [PINSTECH], Pakistan)

Session Classification: B12

Track Classification: RADIATION TECHNOLOGIES FOR MEASUREMENT - 04