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New Developments on the Automatic Gamma Column Scanner

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Gamma transmission scanning of distillation columns is one of the most frequently used radioisotope techniques in industry. Recently, a new version of automatic gamma column scanner was developed under the cooperation of Korea Atomic Energy Research Institute (KAERI) and GammaTech Inc. to facilitate high quality gamma scanning services to local industry. The scanner controls the movements of the source and the detector, records radiation counts and shows graphically the result of scanning on the screen. Instead of using multiple lines (guide cables, holding cable, signal cable and ruler) for the source and the detector in manual column scanning system, only one line is used in each side by employing tensioning tools and wire signal cable in the automatic system. Remarkable improvement in both hardware and software were made in the new version. The new system features shockless movement of a source and a detector for their precise control which is pivotal for acquiring measurements with high confidence. Software and associated hardware of the system was built with the products that have a worldwide reputation as standard tools in engineering fields to make the maintenance as well as further improvement more convenient. The improvements in the tensioner system, the encoder and its calibration method, radiation detection system and gamma energy spectrum, control box, software program and its operation methods are introduced. The procedures for installation and operation of the scanner are presented.

Country/Organization invited to participate

Korea, Republic of

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