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Numerical Simulation of Measurement by Gamma Ray Scanning of Coke Deposition in Packed Bad of Distillation Column

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In distilation column, the packed column for gas-liquid contacting are used extensively for absorption, stripping and distillation operations. One of principal troubleshooting encountered in the operation packed bed is the coke disposition which is related process condition and structural problems. As the gamma scanning technique is an adequate to define on-line troubleshooting, in the present study, we try to define by Monte carlo numerical simulations the minimum rate of coke deposition in the packed bed that can be revealed by this technique. Such information, permit to assist engineers in troubleshooting process problems, optimize production and minimize plant down time. A simple packed bed geometry was reproduced in the numerical model, with a differents coke deposition rates. The preliminary simulation results show that it is possible to detect coke deposition for coke occupation volume higher than 7.3% compared to the packed bed total volume. In the the second part in this work will be dedicated to define an optimal cofiguration of gamma scaning to provide accurate measurement of coke deposition rate taking into account the coke

Country/Organization invited to participate

Morocco

Primary author: Ms OUARDI, Afaf (National Center of Energy Science and Nuclear Techniques, Morocco)

Co-authors: Mr SAADAOUI, Abdelaziz (National Center of Energy Science and Nuclear Techniques, Morocco); Ms OUJEBOUR, Fatima Zahra (National Center of Energy Science and Nuclear Techniques, Morocco); Mr OUTAYAD, Rabie (National Center of Energy Science and Nuclear Techniques, Morocco); Mr ALAMI, Rachad (National Center of Energy Science and Nuclear Techniques, Morocco)

Presenter: Mr ALAMI, Rachad (National Center of Energy Science and Nuclear Techniques, Morocco)

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