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## Validation of CFD Codes Using Radiotracer RTD Analysis of Stirred Vessels

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### ABSTRACT

Radiotracer residence time distribution (RTD) and computational fluid dynamics (CFD) are two methods (experimental and numerical) that can be used to study the performance of industrial process reactors. Although all the required parameters of a process vessel can be gotten using RTD methodology results should be used to validate CFD codes. CFD simulations does not only make the design of flow systems much more easier but also better explains the system's flow structure. The aim of the investigation was to used results obtained from a radiotracer RTD analysis of stirred vessels to validate CFD codes. The flow field in the vessel was simulated using CFD multiphase and turbulence models. The simulated flow field was used generate the RTD using a Lagrangian particle tracking method. The simulated RTD curves and mean residence time were in good agreement with experimental results.

### Country/Organization invited to participate

Ghana

**Primary author:** Mr DAGADU, Christian Priesley Kofi (Ghana Atomic Energy Commission, Ghana)

**Presenter:** Mr DAGADU, Christian Priesley Kofi (Ghana Atomic Energy Commission, Ghana)

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