

Parthkumar Patel

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April 16, 2022

Dear Prof. ,

I am a PhD scholar working under the guidance of Prof. A. John Arul, Homi Bhabha National Institute (HBNI), Indira Gandhi Centre for Atomic Research, India. I plan to submit my Ph.D. thesis in December, 2022.

I have carried out my Ph.D. in severe accident analysis with prime focus on development of mechanistic modelling of the severe accident source term for sodium cooled fast reactor. We have developed/used both Python and OpenFOAM based tools to analyze in-vessel, interface and in-containment source term. For in-vessel assessment, we have developed tool to determine fission gas release under gap release phase. The intra-grain fission gas diffusion was modelled by standard diffusion equations, whereas inter-grain release of the fission gas was modelled using the percolation based model. The model would be not only helpful to determine gap release under accident conditions, but would be helpful to locate failed fuel elements. The developed tool was also used to analyze the allowable failed fuel elements during reactor operation for Prototype Fast Breeder Reactor (PFBR).

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Sincerely,



John Doe