

Education

BSc Physics, Mutah University, Jordan, 2008

MSc Nuclear Engineering, University of Paris Sud, France, 2012.

Short Bio

Hamza Ayyash holds M.Sc. degree in nuclear engineering from the University of Paris Sud XI and B.Sc. in physics from Mutah University. His M.Sc. degree studies focused on providing nuclear energy as a clean source of energy along with a strong research profile on all aspect of nuclear engineering in which a candidate can explore a research field as part of the M.Sc. degree requirement. He was a trainee at the French atomic and alternative energies commission (CEA de Saclay) in the field of validation and verification of numerical methods against reference calculations obtained from Monte Carlo simulation to solve the Boltzmann neutron transport equation using the French code (APOLLO®). Each solver uses different methods to discretize both angular variable and spatial variable. Discretization of angular variable is accomplished by the discrete ordinates method (Sn), the spherical harmonics method (Pn) and the simplified spherical harmonics methods (SPn). For the spatial variable, it depends on the geometry of the model and one or more of the following methods are used within the same solver: the finite element method, the nodal method, the method of characteristics, the diamond difference method and the Lagrange finite element method. The numerical solvers overall performance was to be validated against reference results obtained by Monte Carlo calculations. International benchmark models were used for testing and each with different geometries and building materials. Monte Carlo simulation yields accurate results but is time consuming and requires huge memory and CPU capacity. The idea was to compare all the results and analyze them to optimize the required CPU time and emit calculation route recommendation for users. International benchmark models were used for testing and each with different geometries and building materials. Monte Carlo simulation yields accurate results but is time consuming and requires huge memory and CPU capacity. The idea was to compare all the results and analyze them to optimize the required CPU time and emit calculation route recommendation for users. After finishing his B.Sc. degree, he worked at the laboratories of Uranium mining and exploration at the Jordan atomic energy commission.