AHMED HASSANEIN
Senior Nuclear Engineer
Energy Technology Division
Argonne National Laboratory
Argonne, Illinois 60439
Tel: (630) 252-5889 Fax (630) 252-3250
hassanein@anl.gov

Professional Experience:

More than 20 years of experience in research and development in nuclear engineering and material science fields. Nationally and internationally recognized as one of the world's foremost lead persons in the area of modeling material response to different radiation sources. Has developed unique models and a comprehensive computer package to predict materials behavior, lifetime issues, and fluid hydrodynamics under various irradiation conditions. The developed models are being used in several national and international research fields.

Developed and created new research group in computational physics and hydrodynamics and attracted funding from various sources such as nuclear physics, high-energy physics, magnetic and inertial fusion, Intel Corp., International Sematech, and numerous space organizations.

Author of more than 270 journal publications and technical reports. Unique technical publications in many fundamental science areas including heat transfer, thermal hydraulics, radiation damage and materials' lifetime, hydrodynamics, particle diffusion and transport, atomic physics, and photon and radiation transport. Extended level of knowledge in various areas such as Nuclear Physics, High Energy Physics, Space, and Medical Research. Frequent invited speaker and chairperson at national and international conferences and workshops. Frequent keynote speaker at university departmental seminars and world-class institutions.

Specific Experience:

Developed several advanced computer codes in multi-dimensions to predict materials behavior, failure, and lifetime during intense power deposition for fusion science, nuclear physics, high-energy physics, and space applications.
Developed computational models for atomic physics/photon radiation transport/magneto-hydrodynamics in multi-dimensions to model materials evolution during powerful beam bombardment of various targets.

Developed new numerical methods for solving four moving-boundary problems with solid/liquid/plasma interfaces for different radiation interactions with materials.
Developed models and codes for hydrogen isotope interaction with materials to predict diffusion, permeation rates, and inventory in multi-layered structure. Developed a comprehensive three-dimensional Monte-Carlo codes to model particle transport in complex materials and compounds.

Developed integrated and comprehensive models for medical applications including electric arc injuries and prevention and laser interaction.

Worked as Adjunct Professor at North Carolina State University, Department of Nuclear Engineering. Advised graduate students on research subjects and Ph.D. thesis.

Education:

Doctor of Philosophy	Nuclear Engineering	University of Wisconsin
Master of Science	Physics	University of Wisconsin
Master of Science	Nuclear Engineering	University of Wisconsin
Master of Science	Nuclear Engineering	Alexandria University – Egypt
Bachelor of Science	Nuclear Engineering	Alexandria University – Egypt
	"Distinction, Degree of Honor"	