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Modeling and simulation of nanomaterials



With beginning of the third millennium, the emergence of new techniques has made synthesis and construction of matters at nanoscale possible, leading to an extremely rapid rise of the field of nanomaterials science. Today, the electronics industry is the result of advances in nanomaterials research. As electronic devices get smaller, there are increasing challenges in silicon technology. Materials with new scaling properties need to be developed urgently. Indeed, nanomaterials science promises a wide

range of novel applications of new perspectives.

Therefore, theoretical modeling and computational simulation have advanced as much as the experimental techniques in nanomaterials science. The development ranges from density functional algorithms to mesoscale methods, which enables the pursuit of the characteristic nature of nanomaterials as well as predict and design functional nanomaterials. On the other hand, recent development of parallel processor supercomputers has led to tremendous increase (by a factor of a million) in computational power. These developments together have been creating new opportunities for modeling and simulation of electronic properties of nanomaterials, as well as for designing novel nanoelectronic devices.

Bio data

Yarub Al-Douri has gained Doctorat D'etat, MSc and BSc in Materials Science and Physics, respectively. He has been appointed as Professor, Consultant Expert, Visiting Professor, Associate Professor, Assistant Professor, Research Fellow (A), Scientific Collaborator and Post-doc in Malaysia, Algeria, Yemen, Singapore, Germany and France, respectively. He has more than quarter century experience of scientific research, university teaching and administrative duties, more than 527 publications currently including patents, books, chapters review, papers, articles and conferences and 4.2M US\$ research grants. His citations = 3777, h-index = 27 and i10-index = 104 for the moment. He has graduated under his supervision many of

PhD and MSc students. He is Founding Editor-in-Chief of Journal of Experimental and Theoretical Nanotechnology Specialized Researches, Editor-in-Chief of World Journal of Nano Science and Engineering, Associate Editor of Nano-Micro Letters (Q1), Editor and Peer-reviewer of different international journals, member of different international scientific associations and has been honored 60 awards internationally. He has initiated Nanotechnology Engineering MSc Program and Nano Computing Laboratory, the first ones in Malaysia. His research interests are Modeling and Simulation, Semiconductors, Optical Studies, Nanoelectronics, Nanomaterials and Renewable Energy.