

2nd International Conference on **Smart Materials & Structures**

February 29-March 02, 2016 Philadelphia, Pennsylvania, USA



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Intelligent materials and structures modelling and optimization

Artificial Intelligence (AI) techniques have been widely used during the last two decades and remain highly-researched topics, especially for materials and structural engineering problems. At first, applied AI techniques in engineering field will be presented and then new advances in them will be mentioned. Then, two main applications of AI techniques in both materials and structures fields, modelling and optimization will be discussed in this presentation. For the materials modelling and optimization some of key AI application such as coupled SelfSim and genetic programming framework will be introduced for non-linear material constitutive modelling. For application of AI in structural engineering, some special topics such as AIs for response modelling of a new structural system under seismic loads and optimization of large-scale structures (e.g. tower structures) will be expressed.

Biography

Amir H Gandomi received his PhD from University of Akron, OH. He was selected as elite in 2008 by National Elites Foundation. He used to be a Lecturer in several universities and he is currently a distinguished Research Fellow in an NSF Center for the study of evolution in action (BEACON) located at Michigan State University, MI. He published over 100 journal papers and 4 books. He is one of the most cited researchers in civil engineering field. He also served as Associate Editor, Editor and Guest Editor in several prestigious journals. His research interests are artificial intelligence and their applications in engineering modeling and optimization.

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