

Emerging Materials in Solar Cells

Date: Tue. 1st Oct.

Time: 2:10 pm

Location: Building 59, Room 2016

Speaker:

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Abstract:

Recently, there have been a considerable efforts and persistent dedication to improve the performance of solar cells and to develop novel solar cell materials. Thus, solar cell technologies have recently advanced in several fronts. Most of the stagnated technologies were considerably improved. These developments are mostly due to the improved material quality and cumbersome fabrication sophistication. Furthermore, one of the most important developments is the introduction of a new family of hybrid perovskite materials in solar cells. This revived the search for new materials for solar cells beyond the dominant – yet relatively expensive – Silicon. In this seminar, I'll take briefly about the operation and losses in solar cells and the current and emerging technologies. More focus will be devoted for the computational and machine learning (ML) search of new materials for solar cells.

Bio:

Dr. Fahhad H Alharbi is an associate professor in Electrical Engineering department at KFUPM. He obtained his PhD degree with distinction from the University of Colorado at Boulder (2004), and the MS. (2001) and BS. (1997) degrees from KFUPM, Saudi Arabia. Before joining KFUPM, he worked at Hamad Bin Khalifa University and its Qatar Environment & Energy Research Institute (Qatar), IBM Inc. (US), King Abdulaziz City for Science and Technology (KACST, Saudi Arabia), and Saudi Aramco. His current research interests are machine learning for computational materials discovery, computational physics, and solar energy harvesting. He published more than 74 journal papers and 20 other conference papers.