

Title **Perovskite solar cells**

Speaker **Dr. Sahel Ashhab**
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Date & Time **Monday, August 21, 2017 1:30 p.m.**

Place **I2CNER hall, I2CNER Bldg.1, Ito campus, Kyushu University**

Abstract

In the past five years, solar cells based on perovskite materials have shown great promise and remarkable advances, with their power conversion efficiency rising from a few percent to over 22%. The success of these materials is the result of a combination of favorable properties, including a near optimal band gap and good electron and hole transport properties. I will give a brief overview of the physics of perovskite solar cells, covering the properties that have allowed them to achieve such high performance as well as some challenges and questions facing these materials as potential materials in commercial solar cells. I will also talk about our recent theoretical work where we used a tight-binding model to investigate the effect of disorder on the electronic states of perovskite materials.

About the Speaker

Dr. Sahel Ashhab is a Senior Scientist in the Theory, Modeling and Simulation Group at the Qatar Environment and Energy Research Institute (QEERI) in Doha, Qatar. He obtained his B.S. degree in physics from the University of Jordan in 1996 and his M.S. and Ph.D. degrees in theoretical condensed-matter physics from the University of Illinois at Urbana-Champaign in 1998 and 2002, respectively. He then spent two years as a postdoctoral researcher at the Ohio State University in Columbus. During his Ph.D. and postdoctoral work, he did research on Bose-Einstein condensation in cold atomic gases. From 2004 until 2013, he was a research scientist at RIKEN, Wako, where his research focused mainly on quantum phenomena in superconducting circuits. At QEERI he is studying quantum phenomena in electric circuits as well as solar energy.

Host: Professor Petros Sofronis

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