

The IEEE Photonics Society will host a technical meeting at Corning Incorporated Sullivan Park Auditorium.

If interested, please contact Carlo Kosik Williams (kosikwilca@corning.com) or Robert Boudreau (boudreaura@corning.com).

Title: Invited Speaker - Review of Photovoltaic Energy Production Using Thin Film Modules

Speaker: Timothy Gessert
National Center for Photovoltaics
National Renewable Energy Laboratory

Date: 9:00 a.m. October 21, 2009

Location: Corning Incorporated Sullivan Park Auditorium

Abstract

It is now widely accepted that thin-film photovoltaic (PV) devices will be important contributors of new US electricity generation. The annual production of PV devices needed to meet conservative U.S. Department of Energy goals for 2050 represents ~100 square miles of active module area (20 GW), or ~200 times the total area of photovoltaic modules installed in the US by 2004. However, if the rate of growth observed in PV module production for the past eight years continues, 100 square miles of annual US PV production could be achieved as early as 2018. Further, the amount PV installed by 2036 could generate the entire 2004 US Total Energy Consumption (~100 Quadrillion BTU's, i.e., the combined energy consumed in the US from petroleum, coal, natural gas, nuclear, and all renewable sources). Regardless of what assumptions are made, PV represents a significant future market for related materials and technologies. This talk will discuss thin-film PV devices within the context of the major PV technologies in production today, and indicate areas where improved material and device understanding would be beneficial. This work was performed with the support of US Department of Energy Contract No. DE-AC36-08-GO28308. This abstract is subject to government rights.

Speaker Bio

Tim Gessert is a Principal Scientist and Group Manager of Polycrystalline Thin Film PV Research at the National Renewable Energy Laboratory (NREL) in Golden, Colorado. He received degrees in physics from University of Wisconsin-River Falls (B.Sc.), Colorado School of Mines (M.Sc.), and University of Wales - College of Cardiff (Ph.D). His 25+ years at NREL have included leading the Device Development and Fabrication Team, and the High Performance CdTe Device Research Team. Activities have included development of vacuum and photolithographic processes, transparent-conducting oxides, photovoltaic absorber layers, and related electrical contacts. His present research is directed at understanding how choices in processes and device design affect the ultimate performance and stability of thin-film photovoltaic devices.