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SFI Strategic Research Cluster in Advanced Biomimetic Materials for Solar Energy Conversion

PUBLIC LECTURE

The Present and Future of Photovoltaic Manufacturing

Professor Colin Wolden

SFI E.T.S Walton Fellow, UCD School of Chemical & Bioprocess Engineering, UCD Dublin

Weaver Distinguished Professor, Dept of Chemical Engineering, Colorado School of Mines

October 2010

Followed by Networking Reception

Clinton Auditorium, Global Irish Institute, UCD Dublin, Belfield

Earlier this year, Prof Colin Wolden was asked by the US National Science Foundation to organise a workshop on the topic of accelerating photovoltaic (PV) manufacturing. This workshop brought together an equal mix of leading representatives from industry, academia and national labs. The goals of the workshop were to identify the potential technologies and areas of innovation that would lead to low-cost, high-conversion-efficiency and sustainable PV materials. This presentation distils the outcomes from this workshop.

Prof Wolden will describe the magnitude of the sustainable energy challenge, illustrating the prominent role solar energy conversion must have in addressing this issue. The heart of his talk will focus on the current status and future prospects for the major PV technologies including crystal silicon, thin film PV (CdTe, CIGS, a-Si), organic and photo-electrochemical cells (OPV/DSC). The unique advantages, constraints and opportunities afforded by each technology are reviewed. In addition, Prof Wolden will examine some of the important issues that will need to be addressed if PV is to be scaled up to TW/year levels.

Colin A. Wolden is the Weaver Distinguished Professor of Chemical Engineering at the Colorado School of Mines. He received his B.S. in Chemical Engineering from the University of Minnesota, his M.S. in Chemical Engineering Practice from MIT, and his Ph.D. in Chemical Engineering from MIT. His research interests are in the areas of plasma processing, thin film growth, and reactor design. His work has concentrated on the synthesis and processing of metal oxides and polycrystalline semiconductors with applications in electronics, photovoltaics, membranes, and electrochromics. He has published more than 70 scholarly papers, two patents, and two book chapters in the areas of thin film deposition and plasma processing.

He currently serves as the CSM site director for the Center for Revolutionary Solar Photoconversion, a Colorado based industrial consortium that funds basic research. In addition, he is co-Chair of the Energy Frontiers Topical Conference that will be held in conjunction with the 57th AVS International Symposium.

For further details please contact **Dr Sharon Davin**, Cluster Manager. E: **sharon.davin@ucd.ie**; T: (01) 7161719

Please RSVP by Close of Business, Friday 8th October 2010