

Professor Don Morel received his Ph.D. in Physics from Tulane University in 1971 and an MBA from Rutgers University in 1979. He has spent his entire 38 year career working in the photovoltaic solar energy field, primarily on thin-film materials. After receiving his Ph.D. he joined the Corporate Research Laboratories of Exxon as a Research Scientist and was promoted to Group Head. In 1981 he joined the Solar Division of Atlantic Richfield Corporation (now Shell Solar) as Director of Advanced Research and was subsequently promoted to Vice President of Research. At ARCO Solar he was responsible for development of the first commercial amorphous silicon solar modules and subsequently for the scale-up of CuInGaSe₂ to pre-commercial production. He joined the faculty of USF in 1989 as Professor of Electrical Engineering and served as supervisor of the Microelectronics Option. In 2003 he became Chair of the department and served in that capacity until 2009.

Research Interests

Professor Morel's research interests include:

- Photovoltaic solar energy with particular emphasis on the development of thin film solar cells of CuInGaSe₂, CdTe and CdSe, amorphous Si, and organic materials.
- Transparent conductors including ZnO, SnO₂, ITO.
- I-III-VI₂ and II-VI materials and devices.
- High efficiency thin film tandem solar cells.
- Photovoltaic device modeling and simulation.
- Photodetectors, thin film transistors and memory devices, LED's, and x-ray and gamma ray detectors.
- Physical vapor deposition including sputtering, evaporation, close space sublimation and scale up to pre-manufacturing.

Recent Publications

- P. Mahawala, G. Silvaraman, S. Jeedigunta, J. Gadupiti, M. Ramalingam, S. Submaranian, S. Vakkalanka, C. S. Ferekides and D. L. Morel, "II-VI Compounds as the top Absorbers in Tandem Solar Cell Structures", *Materials Science and Engineering B*, 116 (2005) 283 – 291.
- Transparent high-performance CdSe thin-film solar cells *Thin Solid Films*, Volumes 480-481, 1 June 2005, Pages 466-470 P. Mahawala, S. Jeedigunta, S. Vakkalanka, C.S. Ferekides and D.L. Morel
- V. Chandrasekaran, C. S. Ferekides and D. L. Morel, "Consequences of Bandgap Shifts Resulting from Decreasing CIGS Thickness in CIGS Solar Cells", *Proceedings of the WCPEC-4*, Hawaii, May, 2006.
- Development of ZnSexTe1 - x p-type contacts for high efficiency tandem structures *Thin Solid Films*, Volume 515, Issue 15, 31 May 2007, Pages 6132-6135 S. Vakkalanka, C.S. Ferekides and D.L. Morel