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Nanomaterials for 3rd generation sensitized solar cells

Nano-materials are considered as building block for many optoelectronic devices. They differ from bulk counterpart in the size, characteristic and offer new opportunities to be employed in various applications. Zero dimensional (0D) and one dimensional (1D) nanostructures have attracted lots of attention in solar energy harvesting, conversion and storage, owing to their unique physical and chemical properties. Nano-materials offer many advantages in energy conversion specifically in solar cells. These solar cells, depends on the physical interaction between nanomaterials or chemical reaction at the surface or interface of the nanomaterials. In this presentation, we will discuss the zero and one dimensional nanostructures and the role they play in increasing the conversion efficiency of solar cells, taking in consideration the materials to be used to meet the main objective of developing an eco-green solar cell with high conversion efficiency.

Biography

Basma El Zein is the Dean of Scientific Research at UBT. She has nearly 18 years of experience in academic and research institutions. She was a Research Scientist at King Abdullah University of Science and Technology (KAUST) and an Associate Researcher at IEMN, Lille, France. She is a Senior Member of IEEE, Member of ACS, MRS, SPIE and ECS. She has been selected as winner of Albert Nelson Life Achievement Award by Marquis Who's Who, 2017 and Solar Pioneer by MESIA, 2015. Her research interests include working on nanostructures for third generation eco-green solar cells, energy harvesting and energy storage. She is exploring new materials perovskite to be used as light absorber for solid state sensitized solar cells. She is a Reviewer in many international, peer-reviewed journals, the chair or co-chair and on the committee of different international conferences, has published many international journals and had one patent.

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