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**High Surface Area Vertically Aligned Metal Oxide Nanostructures for Dye-Sensitized Photoanodes
by Pulsed Laser Deposition**

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Dye Sensitized Solar Cells (DSSCs) differ from conventional semiconductor devices in that they separate the function of light absorption from charge carrier transport. At the heart of a DSSC is a metal oxide nanoparticle film, which provides a large effective surface area for adsorption of light harvesting molecules. The films need to be thick enough to absorb a significant fraction of the incident light but increased thickness results in diminished efficiencies due to augmented recombination. Here we introduce a new structural motif for the photoanode in which the traditional random nanoparticle oxide network is replaced by vertically aligned bundles of oxide nanocrystals. The direct pathways provided by the vertical structures appear to provide for enhanced collection efficiency for carriers generated throughout the device. The fabrication method is materials agnostic as similar structures will be shown in Nb₂O₅, TiO₂ and SrTiO₃.