

(56)

**References Cited**

## U.S. PATENT DOCUMENTS

2003/0042846 A1 3/2003 Forrest et al.  
2006/0039432 A1 2/2006 Ha et al.  
2009/0014061 A1 1/2009 Harris et al.  
2009/0277503 A1 11/2009 Ludowise

## OTHER PUBLICATIONS

Form PCT/ISA/210 in connection with PCT/US2010/048014 dated Jun. 1, 2010.

Form PCT/ISA/237 in connection with PCT/US2010/048014 dated Jun. 1, 2010.

Marti et al., IBPOWER: Intermediate band materials and solar cells for photovoltaics with high efficiency and reduced cost, Proc. 34th IEEE PVSC, Philadelphia—USA (2009).

Shao et al. "Intermediate-band solar cells based on quantum dot supracrystals," Applied Physics Letters 91, 163503 (2007) and Forrest et al. (U.S. Publication No. 2003/0042846).

Tablero, "Survey of intermediate band materials based on ZnS and ZnTe semiconductors," Solar Energy Materials & Solar Cells 90 (2006) 588-596.

Ekin-Daukes, et al., "Signature of Intermediate Band Materials from Luminescence Measurements," Presented at the 31st IEEE Photovoltaic Specialists Conference, Jan. 2005.

Levy et al., "Quantum Dot Intermediate Band Solar Cell Material Systems with Negligible Valence Band Offsets," Presented at the 31st IEEE Photovoltaic Specialists Conference, Jan. 2005.

Geisz et al., "III-N-V semiconductors for solar photovoltaic applications," Semiconductor Science and Technology, 17 (2002) 769-777.

Dharmarasu et al., "Effects of proton irradiation on n+p. InGaP solar cells," Journal of Applied Physics, vol. 90, No. 5 (2002) 3306.

Algora et al., IEEE Transactions of Electronic Devices, vol. 48, No. 5, May 2001.

Walukiewicz et al., "Nitrogen-Induced Modification of the Electronic Structure of Group III-N-V Alloys," National Renewable Energy Laboratory, Apr. 1999.

Cuadra et al., Thin Solid Films, 451-451 (2004) 593-599.

Marti, et al., IEEE Quantum Dot Intermediate Band Solar Cell, 940-943 (2000).