

Resume



Personal

Name Dr Easwaramoorthi Ramasamy
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Academic Qualifications

- **PhD in Energy Engineering**, 2008, Korea University of Science & Technology
Thesis: Carbon counter electrode for dye-sensitized solar cells
- **M.Sc in Physics**, 2001, Bharathiar University, Coimbatore
Thesis: Solar selective absorber thin films
- **B.Sc in Physics**, 1999, Bharathiar University, Coimbatore

Affiliation to Professional Societies

- Member of **Material Research Society**

Awards & Honors

- Dr APJ Abdul Kalam Gold Medal Award-2015 by GEPRA New Delhi
- Best BK-21 Post Doctoral Fellow Award in Chemical Engineering-2010
- Qualified in **Joint Entrance Screening Test-2001**
- Reviewer for reputed international journals i.e., *ACS Nano, Advanced Energy Materials, Carbon, Chemical Communication, Energy & Environmental Science, Nano Energy, Solar Energy Materials & Solar Cells*

Professional Appointments

- **Scientist-D (2015 - Till date)**
Center for Solar Energy Materials,
ARCI Hyderabad, India
- **Scientist-C (2011-15)**
Center for Solar Energy Materials,
ARCI Hyderabad, India
- **Brain Korea 21-Post doctoral fellow (2009-11)**
Department of Chemical Engineering,
Pohang University of Science and Technology (POSTECH), Korea
- **Senior Researcher (2008-09)**
Advanced Materials and Application Research Division,
Korea Electrotechnology Research Institute, Korea
- **Researcher (2005-08)**
Advanced Materials and Application Research Division,
Korea Electrotechnology Research Institute, Korea
- **Visiting Fellow (2003-04)**
Faculty of Physics,
Weizmann Institute of Science, Israel
- **Project Associate (2002-03)**
Department of Physics,
Indian Institute of Technology Madras, India

Field of Interest

Energy Conversion and Storage Technologies, Device Physics, Optoelectric Characterization, Green Synthesis of Nanomaterials.

Research Expertise

- Design, development and testing of Laboratory scale solar cells and Commercial scale prototype solar modules
- Development of transparent conductive coatings (ITO, FTO, ATO, CNT, Graphene and Metal nanowire)
- Deposition of functional thin films by Sputtering, Electron beam and thermal evaporation, Atomic Layer Deposition and Spray deposition
- Fabrication of thick films by Spin coating, Screen printing and Tape casting techniques

- Synthesis of Ordered mesoporous carbon, Carbon nanotube, Graphene, Mesoporous metal oxides (TiO₂, SnO₂, ZnO) and Perovskites (metal halide and oxides) for energy conversion and storage device applications
- Development of inorganic *p*-type semiconductors for optoelectronic devices.

Patents

1. **Easwaramoorthi Ramasamy**, Sivakumar Govindarajan and Shrikant V Joshi, Production of graphene-based materials by thermal spray, **Indian Patent Application** (No.2142/DEL/2015)

Publication in Peer Reviewed Journals (Total citations: **1799**, *h*-index: **21**)

1. K. L. V. Joseph, A. Anthonysamy, **Easwaramoorthi Ramasamy**, D V Shinde, S Karthikeyan, Jinwoo Lee, Taiho Park, Shi-Woo Ree, Kwang Soo Kim and Jin Kon Kim, Cyanoacetic acid tethered thiophene for well-matched LUMO level in Ru(II)-terpyridine dye sensitized solar cells, **Dyes and Pigments**, DOI:10.1016/j.dyepig.2015.12.007
2. Nanaji Islavath, **Easwaramoorthi Ramasamy***, Dibakar Das and Shrikant V Joshi, Spray coated seed layer for scalable synthesis of aligned ZnO nanowire arrays on FTO substrate and their photovoltaic properties, **Ceramics International** 41, 2015, 4118
3. Inyoung Jeong, Changshin Jo, Arockiam Anthonysamy, Jung-Min Kim, Eunae Kang, Jongkook Hwang, **Easwaramoorthi Ramasamy**, Shi-Woo Rhee, Jin Kon Kim, Kyoung Su Ha, Ki Won Jun and Jinwoo Lee, Ordered mesoporous tungsten suboxide counter electrode for highly efficient iodine-free electrolyte based dye-sensitized solar cells, **ChemSusChem** 6, 2013, 299
4. **Easwaramoorthi Ramasamy**, Changshin Jo, Arockiam Anthonysamy, Inyoung Jeong, Jin Kon Kim, and Jinwoo Lee; Soft-template simple synthesis of ordered mesoporous titanium nitride-carbon nanocomposite for high performance dye-sensitized solar cell counter electrodes, **Chemistry of Materials** 24, 2012, 1575
5. Minsu Seol, **Easwaramoorthi Ramasamy**, Jinwoo Lee and Kijung Yong; Highly efficient and durable quantum dot sensitized ZnO nanowire solar cell using Noble metal free counter electrode, **The Journal of Physical Chemistry C** 115, 2011, 22018
6. K.P.S. Parmar, **Easwaramoorthi Ramasamy**, Jinwoo Lee and Jae Sung Lee; Rapid (~10 min) synthesis of single-crystalline, nanorice TiO₂ mesoparticles with high photovoltaic efficiency above 8%, **Chemical Communications** 47, 2011, 8572
7. **Easwaramoorthi Ramasamy** and Jinwoo Lee; Ordered mesoporous Zn-doped SnO₂ synthesized by exotemplating for efficient dye-sensitized solar cells, **Energy & Environmental Science** 4, 2011, 2529

8. Won Jae Lee, Pravin S Shinde, Guen H Go and **Easwaramoorthi Ramasamy**; Ag grid induced photocurrent enhancement in WO₃ photoanodes and their scale-up performance towards photoelectrochemical H₂ generation, **The International Journal of Hydrogen Energy** 36, 2011, 5262
9. Jongkook Hwang, Jungwon Kim, **Easwaramoorthi Ramasamy**, Wonyong Choi and Jinwoo Lee; Easy Access to highly crystalline mesoporous transition-metal oxides with controllable uniform large pores by using block copolymers synthesized via atom transfer radical polymerization, **Microporous and Mesoporous Materials** 143, 2011, 149
10. Sunhyung An, Jung-Hyun Park, Chae-Ho Shin, Jin Joo, **Easwaramoorthi Ramasamy**, Jongook Hwang and Jinwoo Lee; Well-dispersed Pd₃Pt₁ alloy nanoparticles in large pore sized mesocellular carbon foam for improved methanol-tolerant oxygen reduction reaction, **Carbon** 49, 2011, 1108
11. P.Sudhagar[†], **Easwaramoorthi Ramasamy**[†], Woo Hyung Cho, Jinwoo Lee, Yong Soo Kang; Robust mesocellular carbon foam counter electrode for quantum dot-sensitized solar cells, **Electrochemistry Communications** 13, 2011, 34
([†] *equally contributed authors*)
12. **Easwaramoorthi Ramasamy** and Jinwoo Lee; Ordered mesoporous SnO₂ based photoanodes for high-performance dye-sensitized solar cells, **The Journal of Physical Chemistry C** 114, 2010, 22032
13. Jum Suk Jang[†], Dong Jin Ham[†], **Easwaramoorthi Ramasamy**[†], Jinwoo Lee and Jae Sung Lee; Platinum-free tungsten carbides as an efficient counter electrode for dye-sensitized solar cells, **Chemical Communications** 46, 2010, 8600
([†] *equally contributed authors*)
14. **Easwaramoorthi Ramasamy**, Jinyoung Chun and Jinwoo Lee; Soft-template synthesized ordered mesoporous carbon counter electrodes for dye-sensitized solar cells, **Carbon** 48, 2010, 4563
15. **Easwaramoorthi Ramasamy** and Jinwoo Lee; Ferrocene-derivatized ordered mesoporous carbon as high performance counter electrodes for dye-sensitized solar cells, **Carbon** 48, 2010, 3715
16. **Easwaramoorthi Ramasamy** and Jinwoo Lee; Large pore sized mesoporous carbon electrocatalyst for efficient dye-sensitized solar cells, **Chemical Communications** 46, 2010, 2136
17. K.P.S. Parmar, **Easwaramoorthi Ramasamy**, Jinwoo Lee and Jae Sung Lee; A simple method for producing mesoporous anatase TiO₂ nanocrystals with elevated photovoltaic performance, **Scripta Materialia** 62, 2010, 223

18. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Efficient dye-sensitized solar cell with catalytic multi-wall CNT counter electrodes, **ACS Applied Materials and Interfaces** 1, 2009, 1145
19. Won Jae Lee, **Easwaramoorthi Ramasamy** and Dong Yoon Lee; Effect of electrode geometry on the photovoltaic performance of dye sensitized solar cells, **Solar Energy Materials and Solar Cells** 93, 2009, 1448
20. **Easwaramoorthi Ramasamy**, Won Jae Lee, Dong Yoon Lee and Jae Sung Song; Spray coated multi-wall carbon nanotube counter electrode for tri-iodide (I_3^-) reduction in dye sensitized solar cells, **Electrochemistry Communications** 10, 2008, 1087
21. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Performance variation of carbon counter electrode based dye sensitized solar cell, **Solar Energy Materials and Solar Cells** 92, 2008, 814
22. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Grid type dye sensitized solar cell module with carbon counter electrode, **Journal of Photochemistry and Photobiology A: Chemistry** 194, 2008, 27
23. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Five strip-type dye sensitized solar cell with metal grid lines, **Diffusion and Defect Data Pt.B: Solid State Phenomena** 119, 2007, 315
24. **Easwaramoorthi Ramasamy**, Won Jae Lee, Dong Yoon Lee and Jae Sung Song; Nanocarbon counter electrode for dye sensitized solar cells, **Applied Physics Letter** 90, 2007, 173103
25. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Dye sensitized solar cells: Scale up and current-voltage characterization, **Solar Energy Materials and Solar Cells** 91, 2007, 1676
26. **Easwaramoorthi Ramasamy**, Won Jae Lee, Dong Yoon Lee and Jae Sung Song; Portable, parallel grid dye sensitized solar cell module prepared by screen printing, **Journal of Power Sources** 165, 2007, 446
27. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Glass frit over coated silver grid lines for nanocrystalline dye sensitized solar cells, **Journal of Photochemistry and Photobiology A: Chemistry** 183, 2006, 133

Presentation in National/International Conferences

1. **Easwaramoorthi Ramasamy**, Nanomaterials for High Performance Solar Cells[‡], National seminar on “Advanced materials and their applications”, January 2015, Karpagam University, **Coimbatore, India** ([‡]*Keynote lecture*)

2. **Easwaramoorthi Ramasamy**, Functional Nanomaterials for Next Generation Photovoltaics[†], National Conference on Advanced Functional Materials, January 2014, Bharathiar University, **Coimbatore, India** ([†] *Invited talk*)
3. **Easwaramoorthi Ramasamy**, Nanostructure solar cells for green energy[†], 1st International Workshop on Green Nanotechnology, November 2012, Visvesvaraya Technological University, **Belgaum, India** ([†] *Invited talk*)
4. **Easwaramoorthi Ramasamy** and Jinwoo Lee, Polyaniline coated large pore mesocellular carbon foam counter electrode for flexible dye-sensitized solar cells, International Conference on Clean Energy, April 2011, **Dalian, China**
5. **Easwaramoorthi Ramasamy** and Jinwoo Lee, Highly efficient liquid and quasi-solid dye sensitized solar cells with mesoporous carbon counter electrodes, MRS Spring Meeting, April 2010, **San Francisco, USA**
6. **Easwaramoorthi Ramasamy**, Won Jae Lee and Dong Yoon Lee; Effect of electrolyte cations and additives on the performance of dye sensitized solar cells, Japan-Korea Bilateral Workshop on Dye Sensitized and Organic Solar Cells, December 2008, **Kyushu, Japan**
7. **Easwaramoorthi Ramasamy**, Won Jae Lee, Dong Yoon Lee and Jae Sung Song; Spray coated semi transparent nano carbon counter electrode for dye sensitized solar cells; MRS Fall Meeting, November 2007, **Boston, USA**
8. Won Jae Lee, **Easwaramoorthi Ramasamy**, Dong Yoon Lee and Jae Sung Song; Carrier collectors for dye sensitized solar cells, Photonics: Design, Technology and Packaging, December 2005, **Brisbane, Australia**