CURRICULUM VITAE

Name : Dr ACHINTYA DHAR

Affiliation : Professor,
Department of Physics
IIT Kharagpur, INDIA, PIN 721302

Date of Birth : 13th November 1961 Status : Male/Married

Educational Qualifications :

M.Sc (Physics) from Calcutta University,Kolkata 1984
PhD (Physics) from Jadavpur University (IACS,Kolkata) - 1991

Research Experience :

1. on compound semiconductor thin films for solar cell applications as JRF/SRF at IACS,Kolkata (1986- 1991)
2. on phase change optical materials as Scientific Officer (Project) at IIT,Delhi (1991-92)
3. on High temperature superconducting thin films as Scientific Officer at IIT, Kharagpur.(1992-93)
4. on high dielectric constant thin film materials for memory and gate dielectric applications as Scientific Officer at IIT Kharagpur (1994-2004)
5. on micro-electro-mechanical-systems (MEMS) for microfluidic applications as Visiting Assistant Professor at Texas Tech University, USA (2001-02)
6. Electro-optical properties of transparent conducting oxides and semiconducting polymers at IIT Kharagpur (2004 – Present)

5. PUBLICATIONS	**Number completed**	**Number under review**
(a) Publication in refereed journals	**70**	**2**
(b) Publications in proceedings of seminars / conferences	**61**	**--**
6. RESEARCH GUIDANCE	**Number completed**	**Number in progress**
(a) Guidance at doctoral level	**04**	**03**
(b) Guidance at masters level	**23**	**02**

Specializations/Research Interest :

1. Thin film deposition techniques
2. Optical and electrical measurement techniques
3. Plasma processing techniques
4. Surface and Interface properties
5. Quantum opto-electronic devices
6. Micro-sensor and actuators

Current Research Interest :

In the frontier areas of Nano-Science & Technology and Organic Opto-Electronics

Recent publications on Organic Opto Electronics :

1. *"The effect of substrate temperature on the properties of ITO thin films for OLED applications"*, by V Sivaji Reddy, K Das, A Dhar and S K Ray, **Semicond. Sci. Technol.** 21 (2006) 1747–1752.

2. "Studies on conduction mechanisms of pentacene based diodes using impedance spectroscopy" b*y* V S Reddy, S Das, S K Ray and A Dhar, ***J. Phys D: Applied Physics*****,** 40, 7687 - 7693 (2007)

3. "Carrier transport mechanism in aluminum nanoparticle embedded AlQ3 structures for organic bistable memory devices", b*y* V.S. Reddy, S. Karak, S.K. Ray, A. Dhar, ***Organic Electronics*****,** 10(1), 138-144 (2009)

4. "Multilevel conductance switching in organic memory devices based on AlQ3 and Al/Al2O3 core-shell nanoparticles" b*y* V S Reddy, S Karak, and A Dhar, ***Appl. Phys. Letts.*****,** 94, 173304 (2009)

5. "Photovoltaic properties of pentacene/PCBM discrete hetero-junction solar cells" b*y* V S Reddy, S. Karak, S K Ray and A Dhar, ***J. Physics D: Applied Physics*****,** 42, 145103 (2009)

6. "Organic photovoltaic devices based on pentacene/N,N'-dioctyl-3,4,9,10-perylenedicarboximide heterojunctions" b*y* S Karak, V S Reddy, S K Ray and A Dhar, ***Organic Electronics*****,** 10, 1006-1010 (2009)

7. "Improved photovoltaic properties of pentacene/N,N0-Dioctyl-3,4,9, 10-perylenedicarboximidebased organic heterojunctions with thermal annealing" b*y* S. Karak, S.K. Ray, A. Dhar, ***Solar Energy Materials & Solar Cells*****,** 94, 836–841 (2010)

8. "Optical and charge carrier transport properties of polymer light emitting diodes based on MEHPPV" b*y* V.S. Reddy, A. Dhar, ***Physica B***, 405,1596–1602 (2010)

9. "Photoinduced charge transfer and photovoltaic energy conversion in self-assembled *N*,*N*′-Dioctyl-3,4,9,10-perylene dicarboximide nanoribbons", by
S. Karak, S. K. Ray, and A. Dhar, **Appl. Phy.Lett** 97, 043306 (2010)

10."Improvement of efficiency in solar cells based on vertically grown copper phthalocyanine nanorods" *By* S Karak, S K Ray and A Dhar, ***J. Phys. D: Appl. Phys.*****,** 43, 245101 (5pp) (2010)

11. "The effects of different atmospheric conditions on device stability of organic small-molecule solar cells under constant illumination" by S Karak, S Pradhan and A Dhar, ***Semicond. Sci. Technol***. 26, 095020 (2011)
12. "Enhancing the performance of nanostructured zinc oxide/polymer-based hybrid solar cells using ammonia as a structural and interfacial modifier", by S Pradhan, S Karak and A Dhar, ***J.Phys.D:Appl.Phys.,*** 45,235104(2012)

13. "Synthesis of vertically grown N,N'-Dioctyl-3,4,9,10-perylenedicarboximide(PTCDI-C8) nanostructure for photovoltaic application", S. Pradhan and A. Dhar, ***J.Renewable and Sustainable Energy***, 5(3), 031611 (2013)

14. ""Improvement of the nanostructured zinc oxide/polymer based solar cell efficiency through the incorporation of N,N'- Dioctyl-3,4,9,10-perylenedicarboximide(PTCDI-C8) nanoribbons as charge mediator", S. Pradhan and A. Dhar, ***Synthetic Metals***, 2013 (accepted)

15. "Fabrication of N,N'- Dioctyl-3,4,9,10-perylenedicarboximide(PTCDI-C8) nanostructures through solvent influenced π-π stacking and their morphological impact on photovoltaic performance" S. Pradhan, J. Redwine, J.T. McLeskey Jr. and A. Dhar, ***Thin Solid Films***, 2013(communicated)