

Curriculum Vitae

Dillip Kumar Mishra,
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Siddharth Nagar Phase-I,
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Education

PhD 2000-2005, **Indian Institute of Technology, Bombay, Mumbai**, India, Department of Chemistry; **CGPA: 7.8**

Thesis title: "Preparation, characterization and application of amorphous carbon for photovoltaic solar cell"

Advisor: Prof. Maheshwar Sharon

M.Tech. 1996-1998, **National Institute of Technology, Jamshedpur**, India; **CGPA: 9.23**
Major: Corrosion and Science of surface coatings

Project title: "Electrolytic pickling of mild steel in neutral electrolyte"

Advisors: Prof. M.K.Banerjee and A.Bhattacharya

M.Sc. 1993-1996, **Berhampur University, Berhampur**, India;
Major: Analytical Chemistry; **Percentage: 64.9**

Research and teaching experience

- Post-Doctoral researcher at **NCKU, Taiwan**, 5th April 2006 to 30th June 2008.
 - Vapor Grown Carbon Fiber
The project involved Characterization and testing of VGCF (carbon fiber) composite as heat spreader for LEDs: thermal resistance and LED tests were the focus of study
Contributions: Designing of CVD reactors and experiments, optimization of CVD conditions for

growing half-a-meter long carbon fiber mats, demonstrated thermal resistance better than copper.

- SiC nanowire growth using CVD: Role of substrate surface and SiO₂ for the process were investigated (Co-Guide for master student)
- Velcro type applications: Nanostructures of Nickel using electroless and sputtering; demonstrated the Velcro type application using carbon fiber (Co-Guide for undergraduate student)
- Dye Sensitised Solar Cell: Initiation and implementation of TiO₂ particle and wires for solar cell application. Integration of particle with wires and then to work on all Solid state DSSC
- VGCF: Effect of sputtered iron and substrate surface for growth of carbon fiber (Co-Guide for master student)
- Research Assistant in Dept Of Physics, IIT Bombay: 1st Sept 2005 to 30th March 2006; Thin film of Ruby by PLD
- Research Assistant in SAIF, IIT Bombay: 5th July 2004 to 16th Aug 2005; Associated with Quanta-200 for functioning it smoothly
- Research fellow (AIEJ) at **Nagoya Institute of Technology, Nagoya, Japan** : 22nd May 2002 to 28th April 2003
- Teaching Assistant for Physical chemistry to undergraduate students, IIT Bombay, 2001
- Instructor for Solar to electrical lab to postgraduate students, Energy System Engg. IIT Bombay, 2000/01
- Teaching assistant at XRD lab, 2000-2002, IIT Bombay; 4hrs of instrument operation per week
- Junior Research Fellow at Department of Chemistry, IIT Bombay : Nov1998 to July 2000; Electrochemical growth of metal oxides for Photovoltaic solar cell applications
- M.Tech dissertation work carried out at RDCIS, SAIL, Ranchi, India from Nov 97 to May 98; Optimisation and evaluation of electropickled steel with acid pickled steel

Topics of Interests

- Chemical vapor deposition of Carbon based materials (Fibers, nanotubes and DLC)
- Pulsed Laser Deposition techniques (Excimer, Nd-YAG)
- Renewable energy such as Solar cells
- Optimization techniques using Taguchi Methodology
- Electron microscopy (SEM, TEM)
- Surface analysis of thin films (XPS, AES, Raman)

Papers accepted/communicated

- **D.K.Mishra**, X.Tian, T.Soga, T.Jimbo, M.Sharon, “*Diamond synthesized at room temperature by Pulsed Laser Deposition in Vacuum*”, Jpn.J.App.Phys., 42, L1164, 2003
- X.Tian, **D.K.Mishra**, T.Soga, T.Jimbo, M.Umeno, “*The deposition of a-C:H films by pulsed laser ablation*”, IEEJ, 124E, 54, 2004
- **D.K.Mishra**, N.Bejoy, M.Sharon, “*Application of Taguchi methodology for optimization of parameters of CVD influencing formation of a desired optical band gap of carbon film*”, Carbon Science, 6, 96, 2005
- Szu-Hsien Lin, **Dillip Kumar Mishra**, Jyh-Ming Ting, “*Effect of Ammonia on the Growth of Carbon Nanotubes*”, Journal of Nanoscience and Nanotechnology, 8, 2647 (2008)
- **Dillip Kumar Mishra**, Jyh-Ming Ting, “*Multi-centimeter length VGCF for industrial applications*”, Diamond and Related Materials, 17, 598 (2008)
- Hao-Hsuan Wu, Jyh-Ming Ting, **Dillip Kumar Mishra**, “*Growth of carbon nanotubes in the microchannels of glass substrates*” Diamond and Related Materials, 17, 1462 (2008)
- **Dillip K. Mishra**, Wan-Yu Wu, Hsiao-Ping Chung, Chih-Ming Chung, Jyh-Ming Ting, “*Growth of large area vapor grown carbon fiber mats and its application as heat spreader*” Under review with “Chemical vapour deposition”
- Jyh-Ming Ting, **Dillip Kumar Mishra**, Bol-Wen Yang, “*Growth mechanism of core-shell SiC-SiO₂ nanowires, its raman and cathodoluminescence study*” Under review with “J.A.Cer.Soc”
- **D.K.Mishra**, T.Soga, M.Sharon, “*Microstructural studies of Pulsed Laser annealed amorphous carbon film using Raman spectroscopy*” Submitted for publication

Conferences

- X.Tian, **D.K.Mishra**, T.Soga, T.Jimbo and M.Umeno, “*Amorphous carbon solar cell deposited by pulsed laser deposition*” 3rd World conference on Photovoltaic energy conversion, Osaka, Japan, 11th -18th May, 2003
- **D.K.Mishra**, X.Tian, T.Soga, T.Jimbo and M.Sharon, “*Photovoltaic properties of a-C(N)/p-Si heterojunction fabricated by pulsed laser deposition*”, 14th PVSEC, Bangkok, Thailand, 26th-30th Jan 2004
- Ching-Hsuang Cheng, **Dillip Kumar Mishra**, Jyh-Ming Ting, “*Optical Properties of GZO, Pt/GZO, and GZO/Pt/GZO Thin Films*” Thin Film-2006 Singapore, 11th - 15th Dec 2006
- S.Lin, **Dillip Kumar Mishra**, Jyh-Ming Ting, “*Effects of Ammonia on growth of carbon nanotubes*” Thin Film-2006 Singapore, 11th - 15th Dec 2006
- H.Wu, **D.K.Mishra**, J.M.Ting, S.Chen, “*Microfabrication of carbon nanotubes on Microfluidic channels*” ICMCTF-2007 SanDiego, US, 23rd - 27th

April 2007

- **Dillip Kumar Mishra**, Jyh-Ming Ting, “*Multi-centimeter length VGCF for industrial applications*” at NDNC-2007 Osaka, Japan, 28th - 31st May 2007

Patent Under process (US)

Dillip Kumar Mishra, Jyh-Ming Ting, Hsiao-Ping Chung “Fabrication of Semi-continuous Vapor grown Carbon Fiber mat and Applications Thereof”

Trainings/ Workshops

- Participated in **Taiwan-US airforce workshop** on Nanotechnology, 10th Feb to 12th Feb 2008
- Attended Taiwan Nano exhibition and workshop at Taipei, 26th Sept to 29th Sept 2006
- Participated in the workshop on Taiwan-EU research at NTU, Taipei, Taiwan, 17th April to 19th April 2006
- Attended a workshop on Nanotechnology, IITBombay, 7th to 8th Sept 2005
- Attended a workshop on renewable energy by **ICTP, Trieste, Italy**, 16th Oct to 29th Oct 2005
- Workshop on Electron Microscopy and its associate techniques conducted by SAIF, IIT Bombay from 14th to 18th June-2004
- AIEJ short term scholarship from May 2002 to April 2003 to work in Japan
- Two day workshop on “Innovation and Optimisation using TRIZ and Taguchi techniques” conducted by Research Scholars Forum of IITBombay on 28th and 29th of April 2001
- Summer training on coloring of stainless steel was carried out at NML, Jamshedpur from 28th May 97 to 9th June 97
- Short term workshop on heat treatment and metallography was conducted by ED cell, RIT Jamshedpur from 20th Dec 96 to 24th Dec 96

Personal information

Name: Mr.Dillip Kumar Mishra
Father's name: Late Chandra Sekhar Mishra
Date and place of birth: 5th July 1973, Chitrakonda, India
Sex /Marital Status: Male/ Single, Nationality: Indian
Languages known: Oriya (mother tongue), Hindi, English and Japanese (basics)
Passport No: F0100366
Available for position: March 2009 onwards

Other activities

- Computer awareness
Operating systems: Windows/Linux; HTML,
Packages: MS office, LATEX 3.1, IGOR pro 3.1, Origin 7.0,
Adobe Photoshop, Image analyzer, Digital micrograph
- Hobbies: Playing Table Tennis and Badminton, photography
and Quizzing
- Part of Asha-bombay chapter during 1999-2000 and Unnati-iit
bombay during 2004-05

References

1. Prof. Maheshwar Sharon,
Professor Emeritus (CSIR),
Adjunct Professor Mumbai University,
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2. Prof. Jyh-Ming Ting,
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