

Dr R K BHARDWAJ (B.Sc, M.Sc, Ph.D)

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CAREER OBJECTIVE:

I seek to contribute my knowledge, education skills and experience. In Physics/Electronics to be innovative and to obtain a challenging position to serve and grow with any organization by valuing the social and moral ethics. This will add value for the excellence of the organization.

SKILLS SUMMARY:

I am hardworking sincere and highly motivated with excellent communication and interpersonal skills supported with strong educational background in the area of Electronics, Semiconductor Etching. I have been visited USA two times to present a paper in International Conference. I have more than 15 years teaching and research experience.

ACADEMIC QUALIFICATIONS:

- 1. Ph.D. (Physics)**, 2008 Panjab University, Chandigarh, India.
- 2. M.Sc. (Physics) specialization Electronics** from C C S University, Meerut, India (1994, 1st Division (546/900) 60.6%)
- 3. B.Sc. Honors** (Physics, Mathematics and Statistics) from Meerut University, Meerut (1992, 1st Division (1462/2125) 68.8 %)
- 4. Senior Secondary** Non-Medical, UP Board, Allahabad (1989; (287/500) 57.4 %)
- 5. Matriculation** (10th) from UP Board, Allahabad (1987; (403/600) 67.2 %)

Ph.D. SUPERVISORS:

1. Dr. R P Bajpai

Ex-Vice-Chancellor, Kurukshetra University &

Ex-Vice Chancellor, G J University, Hissar, INDIA

Former Director CSIO, Chandigarh

2. Dr. L M Bhardwaj

Ex-Head & Deputy Director

Biomolecular Electronics and Nanotechnology Division

Central Scientific Instruments Organization, Sector-30, Chandigarh-160030, INDIA

CONCLUSION OF RESEARCH WORK:

Electron Cyclotron Resonance (ECR) technique is optimized for Semiconductors etching & Silicon based material specially Si, SiO₂ and Si₃N₄ using reactive chemistry in Chemically Assisted Plasma Etching (CAPE) and Reactive Ion Etching (RIE) mode. The results suggested that with independent control of various etch parameter like fellow of gases, mixture of gases, Pressure, Input/output Power including substrate environment and position. ECR etching has high potential for development of tailored etch chemistry for selective & anisotropy etching of fine pattern for VLSI and hybrid device fabrication.

EMPLOYMENT EXPERIENCE:

- 1 7th September 2015 to till now as Faculty member in ICFAI University, Baddi (HP).
- 2 5th July, 2008 to 8th August, 2014 Faculty member cum Dean Academic in ICL Institute of Engineering & technology at Shahzadpur, Ambala.
- 3 2nd July, 2007 to 10th June, 2008 Lecturer at RIMT-MAEC Mandi Gobindgarh.
- 4 4th Feb, 2007 to 08th April, 2007 teach M.Phil (Physics) students at Apex Education Centre, Chandigarh.
- 5 28th August, 2005 to 31st January, 2007 Faculty member at GGS College, Kharar.
- 6 6th November, 2001 to 26th August, 2005 research work at Central Scientific Instruments Organization (CSIO), Sector 30 C, Chandigarh.
- 7 12th Feb, 1998 to 21st Sep, 2001 Lecturer in Physics at Chandigarh College of Engg. & Tech. Sector 26, Chandigarh.
- 8 1st May, 1997 to 10th February, 1998 Lecturer in Physics at Bhopal Inter College, Chandigarh.
- 9 30th October, 1995 – 31st March, 1997, Project Fellow at Deptt. Of Physics, Panjab University, Chandigarh.

PERSONAL DETAIL:

DATE OF BIRTH	April 01, 1975
NATIONALITY	Indian
LANGUAGES	Hindi, English and Punjabi
MARITAL STATUS	Married

PUBLISHED SCIENTIFIC PAPERS:

- 1 **“A Comparative study of ECR based Chemically Assisted Plasma Etching of GaAs & Silicon”** Paripex – Indian journal of Research Vol-3 Issue 5, June 2013 ISSN -2250-1991 (PP 243-244) Ashutosh Bilves & R K Bhardwaj.
- 2 **“A Survey on the Chemical Assisted Plasma Etching of Semiconductors”** Paripex – Indian journal of Research Vol-2 Issue 4, April 2013 ISSN -2250-1991 (PP 306-307) Ashutosh Bilves & R K Bhardwaj
- 3 **“Characterization of ECR Etching for Si, SiO₂ and Si₃N₄ in reactive Ion Etching and Chemically Assisted Plasma Etching Mode”** R K Bhardwaj, Prem Singh, Kuldeep Chand Ashutosh Bilves Purva Mimaansa A Multi Disciplinary Research Journal Vol 4, No 1-2 , March – September 2013 PP 85-92, ISSN 0976-0237.
- 4 **“Electron Cyclotron Resonance Based Chemically Assisted Plasma Etching Of Silicon in CF₄/Ar Plasma”** R. K. Bhardwaj, S. K. Angra, R. P. Bajpai, Madan Lal and Lalit M. Bhardwaj AIP Conference Proceedings Volume 788, Issue 1, pp. 343-348, 2005 ISSN 0094243X.
- 5 **“ECR based chemically chemical etching of GaAs”** R. K. Bhardwaj, Lalit M. Bhardwaj, S. K. Angra and R. P. Bajpai, International Conference on GaAs, May, 2004, USA. ISBN 1893580059
- 6 **“Etching of GaAs in RIE & CAPE mode – Characterization of surface layer”** R. K. Bhardwaj, S. K. Angra, R. P. Bajpai, Nirmal Singh and Lalit M Bhardwaj International Conference on Compound Semiconductor April 14-17, 2008, Chicago, USA. ISBN978-1-89358-011-4
- 7 **“Etching of Silicon in RIE & CAPE mode”** R. K. Bhardwaj, S. K. Angra, Lalit M. Bhardwaj, R. P. Bajpai National symposium on Instrumentation (NSI-28), November, 2003 Pantnagar (India).
- 8 **“An Improvised Metallic Stub For SEM Examinations”** M.L Sharma, Jasvirsingh, HPS kang, R. K. Bhardwaj, Sanjeev kumar XXVI Annual Conference on Electron Microscopy & Allied Fields, April 2003, Shimla (India).
- 9 **“ECR based plasma assisted ion chemical etching of silicon”** R. K. Bhardwaj International Conference on Characterization and metrology for ULSI technology, Austin, March 2003, Texas, USA. ISBN 0735401527 & ISBN :13: 9780735401525
- 10 **“Etching of Silicon”** R. K. Bhardwaj Institute of Physics (IOP), January 2003, London, UK.
- 11 **“ECR plasma assisted chemical etching of semiconductors”** Lalit M. Bhardwaj, S. K. Angra, R. K. Bhardwaj, and R. P. Bajpai National symposium on Science & Technology of Vacuum and Thin films (IVSNS-2001) September 2001, Mumbai (India).
- 12 **“ECR Based Chemically Assisted Plasma Etching of Silicon in CF₄/O₂ Plasma”** R. K. Bhardwaj, S. K. Angra, R. P. Bajpai & Lalit M Bhardwaj 12th Brazilian workshop on Semiconductor Physics April 2005, Brazil.

- 13 “Nanodevices based on Biomotors”** International Conference On Nano Sensores & Technology (ICNST-2010) Rajesh Kumar, R K Bhardwaj, Sheenam, kuldeep chand Lalit M Bhardwaj , Arun K Lall at Central Scientific Instruments Organization (CSIO), on October 28-30, 2010 Chandigarh, India.

WORKSHOPS/CONFERENCES/SEMINARS ATTENDED:

1. Attend an “**International Conference on Quark- Gluon Plasma**” on March 29-31, 1997 at University of Rajasthan, Jaipur.
2. Attended a workshop on “**Curriculum Development**” on July 12 – 14, .2000 at Technical Teachers Training Institutes, sector 26, Chandigarh.
3. Attend “**IETE 45th Annual Technical Convention on Nanotechnology**” from September 30 to October 01, 2002 at CSIO, Chandigarh.
4. Attend a “**16th Workshop on Scanning Electron Microscopy**” on January 4-6, 2003 at Regional Sophisticated Instrumentation Centre, Panjab University, Chandigarh.
5. Attend a “**Workshop on Analytical Instruments**” on March 26-28, 2003 at Regional Sophisticated Instrumentation Centre, Panjab University, Chandigarh.
6. Attend “**Twelfth International Workshop on Physics of Semiconductor Devices 2003**” (IWPSD 2003) on December 16-20, 2003 at IIT Madras.
7. Attend “**Indian National Academy of Engineering Conference on Nanotechnology**” (ICON-2003) on December 22-25, 2003 at CSIO, Chandigarh.
8. **Visit USA to present a paper in International Conference on May 3-6, 2004 at Miami Beach, Florida, USA.**
9. **Visit USA to present a paper in International Conference on April 14-17, 2008 at Chicago, USA.**
10. Attend a National level seminar on “**Emerging Trends in Nanotechnology**” on March 30-31, 2010 at S D College, Ambala.
11. Attend “**FICCI India Innovation Growth Programme 2011**” on 24th Dec 10 at Chandigarh.
12. Attend “**International Conference On Nano Sensores & Technology (ICNST-2010)**” at Central Scientific Instruments Organization (CSIO), on October 28-30, 2010 Chandigarh, India
13. Attend a **National Level Seminar on E- governance and won the prize** on May 23, 2009 at GVM Institute of Management & Technology at Murthal, Haryana.
14. Attend “**FICCI India Innovation Growth Programme 2014**” on 10th Jan 14 at Chandigarh.

MASTERS DEGREE (M.Phil.)CANDIDATES GUIDED :

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LIST OF PUBLISHED BOOKS:

1. Applied Physics-I (for Himachal Pradesh Board by Eagle Prakashan) edited only
2. Applied Physics-II (for Himachal Pradesh Board by Eagle Prakashan) edited only
3. Applied Physics –II (for J&K Board by Eagle Prakashan) edited only

EXTRA CURRICULUM ACTIVITIES:

1. Organize Blood donation camp in ICL college campus on 28th April, 2010 by GMC&H, Sector 32, Chandigarh.
2. Organize Blood donation camp in ICL college campus on 22nd February, 2011 by PGIMER, Sector 12, Chandigarh
3. Blood Donations more than 30 times (Master Card) and received award from Mrs. Jean Rodrigues (Wife of Ex-Governor of Punjab)
4. National Credit Core (NCC) "B" Certificate.
5. National Service Scheme 180 and 240 hours camp certificate.
6. 1st place in Chess at College level.

Signature

सार-संक्षेप

भारद्वाज पढ़ेंगे शिकागो में पर्चा

मंडी गोविंदगढ़ (फतेहगढ़ साहिब)। आरआईएमटी शिक्षण संस्थानों में से



महाराजा अग्रसेन इंजीनियरिंग कालेज के भौतिक विज्ञान विभाग में कार्यरत डा. आरके भारद्वाज अमेरिका में एक पर्चा पढ़ने का

निमन्त्रण मिला है। डा. भारद्वाज 14 अप्रैल से 17 अप्रैल तक शिकागो में होने जा रही मिश्रित अर्धसंचालक की निर्माण प्रद्योगिकी 2008 नामक एक अन्तरराष्ट्रीय कांफ्रेंस में मिश्रित अर्धसंचालक पर इंच्वंग (अक्षर खोदना) विषय पर पर्चा पढ़ेंगे। इस कांफ्रेंस में विश्व के जाने माने विज्ञानिक भाग ले रहे हैं। उल्लेखनीय है कि अध्यापन के क्षेत्र में 7 वर्ष का अनुभव रखने वाले डा. भारद्वाज ने अपनी डाक्टरेट की उपाधि पंजाब विश्वविद्यालय से डा. ललित मोहन भारद्वाज, प्रो. निर्मल सिंह व कुरुक्षेत्र विश्वविद्यालय के उप कुलपति डा. आरपी बाजपायी की देख रेख में प्राप्त की। इससे पहले भी डा. भारद्वाज 1997 में जेपुर व 2003 में चेन्नई में संपन्न हुई अंतरराष्ट्रीय कांफ्रेंसों में भाग लेने के अलावा 2004 में अमेरिका के मियामी में हुई अंतरराष्ट्रीय कांफ्रेंस में भी भारत का प्रतिनिधित्व कर चुके हैं।

जारी है टिकट से अधिक पैसे की वसूली

अमृतसर। महानगर के रेलवे स्टेशन के बुकिंग घर में अभी भी टिकट से अधिक

डीसी ने लगाए व अब रुके

आदेश

अमर उजाला

आतिशबाजी छोड़ने पर लगा प्रतिबंध

लाउडस्पीकर पर ध्वनि की सीमा तय रात को नहीं बज सकेंगे होर्न

फतेहगढ़ साहिब। उप मजिस्ट्रेट के अधिकारों न्याय व्यवस्था सुनिश्चित करनी चाहिए और सुरक्षा के कुछ पाबंदियों के आदेश ध्वनि प्रदूषण से बचाने के लिए आतिशबाजी को रोकने के लिए आदेश दिया है। सार्वजनिक इमारतों या ध्वनि पैदा करने वाले इमारतों में लाउडस्पीकरों का उपयोग 75 डेसिबल से अधिक नहीं होना चाहिए।

स्टील के रेट न सरकारी कंपनियों

मंडी गोविंदगढ़ (फतेहगढ़ साहिब)। के दा इस्पात मंत्रालय की एडवाइजरी कमेटी के मेबर और आल इंडिया स्टील रोलर एसोसिएशन के अध्यक्ष विनोद वशिष्ठ ने कहा कि पिछले दिनों स्टील अथॉरिटी आफ इंडिया और टाटा जैसी सरकारी कंपनियों द्वारा स्टील के दामों में 5000 रुपये प्रति टन की वृद्धि किए जाने की बात पूरी तरह अफवाह साबित हुई। उन्होंने कहा कि सरकार स्टील के बढ़ रहे दामों पर अंकुश लगाने के लिए गंभीरता से प्रयास कर रही है। इसके चलते स्टील की कीमतों में सरकारी तौर पर बढ़ोतरी किए जाने का संकल ही नहीं रहता। उन्होंने कहा कि



विनोद वशिष्ठ

बड़ी व के उत्त कायो खरम