

## **CURRICULUM VITAE (Dr. Beer Pal Singh)**

### **PERSONAL DETAILS**

**Name** : **Dr. Beer Pal Singh**  
**Father's Name** - **Sh. Karan Singh**  
**Date of Birth** - **January 20<sup>th</sup>, 1975**  
**Nationality** - **Indian**  
**Domocile & Bonafide State** - **Uttar Pradesh**  
**Marital Status** - **Married**

**Position Held** : **Sr. Lecturer**

**Mailing Address** : **Department of Physics**  
**Ch. Charan Singh University,**  
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### **ACADEMIC RECORD**

**2002**

**Ph.D. awarded in Physics** from C.C.S. University, Meerut (India).

### **RESEARCH CONTRIBUTION:**

*Title: Studies on Selenide films.*

Studied cadmium and zinc selenides films prepared by vacuum evaporation and screen printing techniques. The ternary system of cadmium and zinc selenide ( $Cd_{1-x}Zn_xSe$ ) has also been studied. The preparation and properties of CdSe, ZnSe and  $Cd_{1-x}Zn_xSe$  films are very important and useful because of its application in the formation of low cost solar cells, photo-voltaic devices, radiation detector, blue light emitting diodes, laser diodes, laser windows, laser screen materials in projection color TVs and in some other opto-electronic devices. Characterization of materials from optical, structural and electrical consideration involves the determination of features such as optical band gap, nature of band gap, optical constants, crystallographic structure, chemical composition and current- voltage characteristic of the materials. Spectroscopic studies (absorption, reflection and transmission spectra) have been done using "Hitachi Spectrometer model U-3400", X-ray diffractions using Philips X-ray diffractometer (PW 1140/09) and electrical measurements using a programmable digital electrometer (Keithley model- 617).

**1998**

**M.Phil in Physics with I<sup>st</sup> division** from C.C.S. University, Meerut (India)

### **RESEARCH TOPIC UNDERTAKEN**

*Studies on CdZnSe films.*

Studied the  $\text{Cd}_{0.5}\text{Zn}_{0.5}\text{Se}$  sintered ternary films through their optical and structural properties. Optical properties have been studied by using absorption spectra while structural properties studied using X-ray diffraction.

**1997**

**M.Sc in Physics with I<sup>st</sup> division** with Specialization in Electronics from C.C.S. University, Meerut (India).

**1995**

**B.Sc** (Physics, Chemistry and Mathematics) **with I<sup>st</sup> division** from C.C.S. University Meerut (India).

**1992**

**Intermediate** (Science- Mathematics) **with II<sup>nd</sup> division** from UP Board Allahabad.

**1990**

**High School** (Science- Mathematics) **with I<sup>st</sup> division** from UP Board Allahabad.

### **POSITIONS HELD:**

About 11 years of Research & Development experience in the area of Thin Film fabrication & characterization and Nanostructured Materials. Out of this research experience, teaching experience is listed below:

- Currently working as a Sr. Lecturer in Department of Physics, C.C.S University, Meerut (UP).
- Worked as Lecturer in Department of Physics, Jaypee University of Information Technology, Wanknaghat, Solan (HP) from July 2002- July 2004
- Worked as teaching assistant in Department of Physics, C.C.S University, Meerut (UP) from 1998- 2002.

### **ADMINISTRATIVE RESPONSIBILITIES:**

- Currently working as Assistant Proctor.
- Currently working as Assistant warden.
- Worked as Assistant DSW.
- Worked as Warden.

### **ADDITIONAL INFORMATION**

- Participated in the 79<sup>th</sup> four –week **Orientation Programme** from 1<sup>st</sup> November to 28<sup>th</sup> November, 2006 organised by the **UGC-ASC**, Jamia Millia Islamia, New Delhi and obtained **grade “A”**.
- Presented a Seminar Paper in the 79<sup>th</sup> four –week **Orientation Programme** from 1<sup>st</sup> November to 28<sup>th</sup> November, 2006 organised by the **UGC-ASC**, Jamia Millia Islamia, New Delhi.
- One student **completed Ph.D.** under my supervision and two students are pursuing Ph.D under my supervision.
- Five students **completed their M.Phil. Project** under my supervision.

## RESEARCH PUBLICATIONS

### Research papers published in National/ International journals:

1. Effect of ambient hydrogen sulfide on the physical properties of vacuum evaporated thin films of zinc sulfide, *Applied Surface Science*, 254 (2008) 2233-2237.
2. Development of metallic ion beams using ECRIS, *Nuclear Instruments and Methods in Physics Research B (NIM-B)* 252 (2006) 354-360.
3. Development Zn and EU Beams by Plasma Sputtering, *Nuclear Instrument and Methods in Physics B*, 246 (2006), 440
4. Characterization of CdSe<sub>x</sub>Te<sub>1-x</sub> sintered films for photovoltaic applications. *Physica B: Condensed Matter Physics*. 363 (2005) 102-109.
5. Optical, electrical and structural investigations on Cd<sub>1-x</sub>Zn<sub>x</sub>Se sintered films for photovoltaic applications, *Solar energy Materials & Solar Cells* 76 (2003) 399-415.
6. Effect of ambient hydrogen sulphide on the optical properties of evaporated cadmium sulphide films; *Optical Materials* 20 (2002) 171-175.
7. Spectroscopic study of vacuum evaporated crystalline zinc selenide thin films; *Asian Journal of Physics*, 11 No. 2 (2002) 199-203.
8. Band gap of vacuum evaporated CdS thin films; *Indian Journal of Engineering & Materials Sciences* 7, (April 2000) 100-103
9. Effect of ambient H<sub>2</sub>S atmosphere on the optical, structural and electrical properties of vacuum deposited thin films of cadmium sulphide; *Indian Journal of Engineering & Materials Sciences* 9, (April 2002) 153-155.
10. Effect of low ambient H<sub>2</sub>S atmosphere on optical and electrical properties of ZnS thin films; *SPIE Proceedings series* (Eleventh International Workshop on the Physics of Semiconductor Devices, SSPL, Delhi) 2002 Vol. 4746 (2) 1348-1350.
11. Characterisation of sintered Cd<sub>0.5</sub>Zn<sub>0.5</sub>Se films; *SPIE Proceedings series*, (Tenth International Workshop on Physics of Semiconductor Devices, SSPL, Delhi) 2000, Vol. 3975 (2), 1459-1463.

### Research papers/abstracts presented in National/International Conferences / workshops:

1. Growth and Characterization of Vacuum Evaporated Thin Films of Cadmium Sulphide, *Sixth International Conference on Inorganic Materials, Dresden, Germany*, 28-30 September, 2008.
2. Effect of H<sub>2</sub>S on vacuum deposition of CdS and ZnS thin films. *International Conference on Optics and Optoelectronics (ICOL-2005)*, December 12-15, 2005.
3. Influence of the preparation technique on the structural and optical properties of polycrystalline CdTe films; *International Workshop on Preparation and Characterization of Technologically Important Single crystals*, NPL New Delhi, (Feb. 26-28, 2001) 518-522.
4. Optical characterization of vacuum evaporated ZnTe thin films; *National conference on Laser & Spectroscopy*, Meerut College Meerut, India, (February 25-28, 2003).
5. A study of optical constants in vacuum evaporated chalcogenides thin films; *II National Conference on Thermophysical Properties*, Department of Physics, University of Rajasthan, Jaipur. (September 19-21, 2002).
6. Optical properties of Cadmium selenide thin films; *National Conference on Materials and Semiconductor Technologies in Electronic Research*, Department of Physics, GBPUAT, Pantnagar, (November 8-10, 2000).
7. Study of the band gap of CdSe<sub>x</sub>Te<sub>1-x</sub> sintered films; *National Conference on Materials and Semiconductor Technologies in Electronic Research*, Department of Physics, GBPUAT, Pantnagar, (November 8-10, 2000).

8. Optical and photoconducting properties of  $Cd_xZn_{1-x}S$  sintered films; *National Conference on Materials and Semiconductor Technologies in Electronic Research*, Department of Physics, GBPUAT, Pantnagar, (November 8-10, 2000).
9. II-VI Semiconductor sintered films as smart materials for solid state devices; *International Conference on Advance Materials*, Department of Physics, C.C.S. University Meerut, (December 26-28, 2000).
10. Optical and structural properties of CdTe thin films; *International Conference on Advance Materials*, Department of Physics, C.C.S. University Meerut, (December 26-28, 2000).
11. Vacuum deposition of crystalline CdS and ZnS thin films; *International Conference on Advance Materials*, Department of Physics, C.C.S. University Meerut, (December 26-28, 2000).

### **CONFERENCES/ SEMINARS/ SYMPOSIUM ATTENDED:**

1. Attended *Sixth International Conference on Inorganic Materials (IM-2008)* held from 28-30 September, 2008 at **Dresden, Germany** and presented a research paper entitled "Growth and Characterization of Vacuum Evaporated Thin Films of Cadmium Sulphide".
2. Attended a *National Symposium on "Semiconductor Materials and Recent Technologies (SMART- 13-14 October, 2006)* held at BMAS Engineering College Agra and presented a research paper entitled "Optical properties of Lead sulphide (PbS) pellets".
3. Attended an *International Conference on Nano Science & Technology (ICONSAT 2006)* held from March 16-18, 2006 at *India Habitat Centre, Lodhi Road, New Delhi*.
4. Attended an IMS Conference-2006 held from February 17-18, 2006 at *Electronic Science Department, Kurukshetra University, Kurukshetra, Haryana*.
5. Active participation in *National Conference on Engineering Optics & Spectroscopy* held from April 5-7, 2004 at Department of Physics, CCS University, Meerut, and presented a research paper.
6. Active participation in *National Conference on Lasers & Spectroscopy* held from February 25-28, 2003 at Department of Physics, Meerut College Meerut, India. Presented research paper entitled "Optical characterization of vacuum evaporated ZnTe thin films".
7. Attended a National Seminar cum Workshop on "Surface Modifications and Characterizations by Energetic Ion Beams" held from 23-24 Nov.2001 at *Department of Physics, University of Rajasthan, Jaipur*.
8. Active participation in *International Conference on Advance Materials* held from December 26-28, 2000 at Department of Physics, C.C.S. University Meerut, India. Presented research paper entitled "II-VI Semiconductor sintered films as smart materials for solid state devices".
9. Attended *National Conference on Materials and Semiconductor Technologies in Electronic Research* held from November 8-10, 2000 at Department of Physics, GBPUAT, and Pantnagar. Presented research paper entitled "Optical properties of Cadmium selenide thin films".

**(Dr. Beer Pal Singh)**