**Pandey, O.P. Dr.**



**Designation:** Senior Professor

**Education**

* **Ph.D**: (Metallurgical Engineering), Indian Institute of Technology (BHU) Varanasi
* **M.Tech.**: (Materials Science and Engineering), Indian Institute of Technology (BHU)
  + - Varanasi
* **M.Sc**: (Chemistry), Lucknow University

**Experience**

* Research Experience: 31 years.
* Teaching experience: 22 years**.**

**Research Interest:**

Undercooling, Powder Metallurgy, Rapid Solidification, Spray deposition, Heat treatment, Glass Ceramic, Magnetic Materials, Nanomaterials, composites

**Teaching Interests:**

Physical Metallurgy, Materials Science, Materials Processing, Solidification and Casting

Nano-Materials, Phase Transformation, Rapid Solidification, Powder Metallurgy, Ceramics,

Heat Treatment and Composite

**Membership of Professional Bodies:**

* Associate Member of Indian Institute of Metals, Calcutta.
* Life member of Gold Bulletin and Gold Patent Digest, Switzerland.
* Life member of Indian Ceramic Society
* Life member of Indian Thermal Society
* Life member of Society of Indian Technical Education
* Life member of Electron Microscopic Society of India
* Life member of Punjab Academy of Science
* Life member of Materials Research Society of India
* Member of TMS Society USA
* Life member of Magnetics Society of India

**Sponsored Research:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Research Projects** | **Funding**  **Agencies** | **Amount**  **(lakhs)** | **Institute** | **PI/Co-PI** | **Status** |
| 1. | Microstructural Characteristics of Atomized Al-Cu -Si Alloys | UGC  (1994) | 0.16 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 2. | Aomization and Spray – deposition of Copper base Alloys | UGC  (1998) | 0.20 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 3. | Development of Infrastructure in the Area of High Performance Ceramics | AICTE  (1995) | 11.0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 4. | Processing and Properties of Spray Deposited Bearing Materials | UGC  (1996) | 7.5 0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 5. | Development of Electrolyte Materials for Solid Oxide Fuel Cells | AICTE  (2003) | 5.70 | Thapar University | Dr. Kulvir Singh **(P.I.)** Dr. O.P. Pandey  **(Co-P.I.)** | Completed |
| 7. | Development of Sealant Materials for Solid Oxide Fuel cells | DST,  New Delhi (2006) | 25.0 | Thapar University | Dr. Kulvir Singh **(P.I.)** Dr. O.P. Pandey  **(Co-P.I.)** | Completed |
| 8. | Development of High performance Commercial Bearing Materials by Spray Deposition Technique | CSIR, New Delhi  (2006) | 20.0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** Dr. Kulvir Singh  **(Co-PI)** | Completed |
| 9. | Preparation of Strontium Hexa ferrite powders from Celestite ore and Blue Dust | Ministry of Mines  (2008) | 18.0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 13. | Synthesis and Characterization of Aluminium Metal Matrix Functionally Graded Armor Materials Reinforced with Zircon Sand | DRDO,  New Delhi  (2009) | 20.0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 14. | Development of Wear Resistant Light Weight Composites by Spray Deposition Technique | AICTE, New Delhi  (2009) | 09.0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Completed |
| 15. | Preparation & characterization of La1-x AxMO3-δ and Y1-x AxMO3-δ (A= Ca, Sr; M= Ti, Nb) interconnect materials for Solid Oxide Fuel Cells | UGC,  New Delhi  (2009) | 05.5 | Thapar University | Dr. Kulvir Singh **(P.I.)** Dr. O.P. Pandey  **(Co-P.I.)** | Completed |
| 16. | Synthesis of WC nano powder through thermo-chemical reduction and its application for the development of WC-Co composite | DST, New Delhi  (2009) | 27.0 | Thapar University | Dr. O.P. Pandey  **(P.I.)** Dr. Kulvir Singh **(Co-P.I.)** | Completed |
| 19. | Effect of Capping Agents on the size and Stability of Core-Shell ZnS Nanostructures | DRDO,  New Delhi  (2011) | 13.92 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Near to complete |
| 20. | Corrosion Resistant behaviour of Glass –steel interface | UGC, New-Delhi (2011) | 09.25 | Thapar University | Dr. O.P. Pandey  **(P.I.)** Dr. Kulvir Singh **(Co-P.I.)** | completed |
| 22. | Study of La doped mixed conductor for solid electrolyte | DST,  New Delhi,  (2012) | 34. 50 | Thapar University | Dr. Kulvir Singh **(P.I.)** Dr. O.P. Pandey  **(Co-P.I.)** | Ongoing |
| 23. | Study of Alkaline earth metals substitution in Bi based mixed ion conductorfor solid oxide fuel cell application | DRDO,  New Delhi  (2012) | 14.42 | Thapar University | Dr. Kulvir Singh **(P.I.)** Dr. O.P. Pandey  **(Co-P.I.)** | Ongoing |
| 24 | Synthesis and Characterization of Vanadium Carbide Nanoparticles | UGC, DAE, CRS,  (2012) | 7.34 | Thapar University | Dr. O.P. Pandey  **(P.I.)** Dr. Kulvir Singh **(Co-P.I.)** | Ongoing |
| 25 | Development of porous aluminum foam materials for blast mitigation | DRDO ARMREB  (2012) | 17.24 | Thapar University | Dr. O.P. Pandey  **(P.I.)** | Ongoing |

**Fellowships:**

1. Junior Research Fellow (UGC) *School of Materials Science & Technology, I.T., B. H. U. Varanasi* from Aug 1982 to June 1984.
2. Senior Research Fellow (DST) *Deptt. Met. Engg. I.T., B.H.U., Varanasi*, from Sep 1984 to Sept 1985.
3. Senior Research Fellow (UGC) *Deptt. Met. Engg. I.T., B.H.U., Varanasi*, from Oct 1985 to May 1988.
4. Research Associate (UGC) *Deptt. Met. Engg. I.T., B.H.U., Varanasi*, from August 1988 to May 1990.
5. Research Associate (CSIR) *Deptt. Met. Engg. I.T., B.H.U., Varanasi*, from June 1990 to Oct 1992.
6. SERC Visiting Fellow (DST) *Deptt. Met. Engg. I.T., B.H.U., Varanasi*, for the Year (1996-1997).

# Invited Talk Delivered

* **Fabrication of Advance Materials by Atomization and Spray Deposition of Melt.** September 23, 2000; *Deptt of Metallurgical and Materials Engg UOR, Roorkee.*
* **Spray forming techniques for producing rapidly solidified materials.** ISTE – AICTE sponsored short-term course on *“Ferroelectric Materials: State of Art Technology (Feb.2-25, 2000)”* Feb 15, 2000, *SLIET, Longwal, Sangroor*.
* **Metallic glass- their properties and application as sensor materials** – February 15, 2000 ISTE – AICTE sponsored short term course on “Ferraelectric *Materials: State of Art Technology* (Feb.2-25, 2000)” *SLIET, Longwal, Sangroor*
* **Heat treatment of IC Engine Components,** March 1, 2000, *Workshop on Heat treatment and analysis of IC Engine* Feb28, March 1, 2000, *TCIRD, Patiala*.
* **Rapid Solidification of Metallic Materials** *–* Summer Technology Camp for B.Tech students held during July 12 to Aug. 6, 1999, *SBSCET, Ferozpur, organised by P.T.U.*
* **Processing Techniques for Metallic and Non- metallic Materials –** Workshop on Materials Processing, Characterization and Testing for Industrial Quality Control, 23-24 March, NRTC, Parwanoo, HP.
* **Heat Treatment of Materials –** Workshop on Materials Processing, Characterization and Testing for Industrial Quality Control, 23-24 March, NRTC, Parwanoo, HP.
* **Failure Analysis of Electronic Components-***AICTE Sponsored Staff Development Programme on Growth and Characterization of Semiconductor Devices 7-18 November 2005.SLIET, Longawal.*
* **Structural Variation in Materials during EDM Processes** *Seminar on Non-Traditional Machining Processes 17-3-2006 Department of Mechanical Engineering, TIET, Patiala.*
* **Role of structure in understanding the properties of materials**, *International conference on emerging trends in Mechanical Engineering (ICETME-2011), Department of Mechanical Engineering, Thapar University, Patiala, page-527.*
* **Preparation and application of WC as sensor material**, *National seminar on Physics and Technology of sensors (NSPTS-16), University TAP Society, Lucknow.*
* Many more invited talks were delivered at different forums in subsequent years at different organisation.

**Awards:**

1. Awarded the **First Prize** for one of the best paper presentation (Oral) during *National Metallurgist Day celebration and Annual Technical Meeting of the Indian Institute of Metals* held at Ranchi (Nov. 14-17, 1991).
2. **SEM micrograph** of as cast Mg-Cu alloy appeared as **cover photograph of the journal** for the paper entitled **Solidification of Undercooled Melt of Mg-Cu alloy entrapped in its Primary Phase** in *J. Materials Science* *Letter* *11(8) (1992) 1260- 1262*
3. **Best Paper Award for the year 1994** bySteel Authority of India Limited, Ranchi, Bihar for the paper entitled **Non-Equilibrium Solidification of Undercooled Melt of Ag-Cu Alloy Entrained in the Primary Phase** Metallurgical *Transaction A* *25(11) (1994) 2517-2523.*
4. **Best Paper Award in the year 1995** bySteel Authority of India Limited, Ranchi, Bihar for the paper entitled **Undercooling and Solidification of Droplets of Cu-Ag Alloy Entrained in the Primary Phase** *J. Materials Science* *30 (1995) 538-543*.
5. **Best poster award** Manoj Sharma and O.P. Pandey **Optical studies of PVP capped ZnS nanoparticles, International Symposium on Nanostructured materials: Structure, Properties and Applications,** *Kanya Maha Vidyalay, Jalandhar, Oct 28-29, 2009.*
6. **SEM** micrograph of Fe powder appeared as **cover photograph** **of the journal for the paper entitled Effect of excess samarioum oxide on the preparation of Sm2Fe17 Powder by calciothermic reduction** in *J. Materials Science Letter 15 (1996) 2088-2090.*
7. Awarded **Second Prize** for one of the paper presentation (Poster) during *National Symposium on Thermal Analysis, DDU Gorakhpur University, Gorakhpur* – March 26-27, 2000.
8. TEM micrograph of Cu precipitate of Aged HSLA Steel appeared as **Cover photograph of the journal** for the paper entitled **Aging of a copper bearing HSLA-100 Steel in** *Bulletin of Material Science (26) No 4 (2003) 441-447.*
9. Awarded **Third Prize** for the paper **Synthesis of Nano Size WC-Co composite by Carbothermic Reduction (Poster)** in ihe International Conference Metals and Alloys: Past, Present and Future (METALLO 2007) organised by IIT Kanpur 07-10 December, 2007.
10. **SEM micrograph** of spray formed AMC appeared as **cover photograph of the journal** for the paper entitled **Wear and microstructural characteristics of spray atomized zircon sand reinforced LM13 alloy**, *Materialwissenschaft und Werkstofftechnik (MATWER), (Materials Science and Engineering) 41(7) (2010) 568-574.*
11. **Best poster award** Manoj Sharma and O.P.Pandey **Sensing applications of capped ZnS nanomaterials,** *AGM of MRSI, Bhopal, 2011.*
12. **Best poster award** Gurbinder Kaur, O.P.Pandey, Kulvir Singh **Chemical compatability of borosilicate glasses with Crofer 22 APU for SOFC applications,** *AGM**Indian Ceramic Society, 19-22 December, 2011, Agra.*
13. **Best poster award** Gurbinder Kaur, O.P.Pandey, Kulvir Singh **Chemical compatability of borosilicate glasses with yttria stabilized zirconia (YSZ) for SOFC applications,** *AGM of MRSI, 13-15 Feb 2012, Patiala.*
14. **Best poster award** Samiksha Verma, Pooja Chauhan, O.P.Pandey and Puneet Sharma, **Preparation and characterization of barium hexaferrite prepared from bariummonoferrite** in 23nd Annual General Meeting of Material Research Society of India held at Thapar University, Feb13-15, 2012.

**Personal Recognition:**

1. Chaired a session in **National Seminar on Materials Science: Trends and Future (MSTF-2000)** Feb 24-25, 2000, SLIET, Longowal, Sangrur.
2. Chaired a session in **National Conference on Recent Developments in Mechanical Engineering,** Oct 31 and Nov. 1, 2003, TIET, Patiala.
3. Chaired a session in **National Conference on Application of Nanotechnology, organised by Jodhpur Engineering College and Research Centre, Jodhpur.** December 27-29, 2007.
4. Marquis Who’s who 2009 in the Academic column
5. Chaired many sessions in different National/ International conferences at different places in subsequent years.

**Employment History:**

1. Development Engineer, Department of Metallurgical Engg. B.H.U., Varansi from June 1990 to August 1990.
2. Lecturers (Materials Science), School of Basic and Applied Sciences, TIET, Patiala from Oct 1992 to Jan20, 1997.
3. Assistant Professor (Materials Science), School of Basic and Applied Sciences, TIET, Patiala from Jan20, 1997 to April 4, 2006
4. Professor, Thapar University from April 5, 2006 to April 16, 20012 (FN)
5. Adjunct Scientist TCIRD (Since 2004)
6. Senior Professor, Thapar University from April 16, 20012 (AN) till date

**Educational Development:**

* Designed different courses for UG and PG programmes of different universities (Appendix C I)
* Courses taught during last 3 years (Appendix C II)

**Extra Curricular Activities:**

1. Programme Officer National Service Scheme, Thapar Institute of Engineering & Technology, Patiala for four years.
2. Organised several tree plantation camps inside the institute and villages
3. Organised blood donation camps
4. Attended several camps outside the institute

**Name and Address of Referees:**

1. Professor S.N. Ojha, Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, Varanasi - 221005
2. Professor K.K. Raina, Deputy Director , Thapar University, Patiala 147004
3. Dr. N. S. Mishra, Professor and Head, National Institute of Foundry & Forged Technology (NIFT), Hatia, Ranchi - 834002 Bihar
4. Professor K. Chattopadhyay, Department of Metallurgy, Indian Institute of Science, Bangalore

**Administrative:**

* Head, School of Physics and Materials Science, Thapar University, April 15, 2006 to August 7, 2011.
* Warden, PG Hostel, TIET, Patiala (3 Years) (July 2, 2000 –May 19, 2003)
* Coordinating warden, TIET, Patiala (7 Years) ( May 20, 2003- September 3, 2010)
* Programme Officer NSS (4 Years)
* Acting Head, School of Basic & Applied Sciences
* Lab In charge (6 Years and still continuing)
* Coarse Coordinator, PG Programme (3 Years)
* Work-Term In-charge, PG Programme
* Time Table In charge (3 Years)
* Member of Senate and various Committees
* Member of Research Board (More than 7 Years)
* Member of fact finding committee
* Member of institute marks grading committee
* Student counsellor of various departments
* Member of different committees of other institutions

**M.Sc./M.Tech./MDS Theses / Project Supervised:**

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| --- | --- | --- | --- |
| **S. No.** | **Thesis Title** | **Name of Students** | **Year** |
| 1. | Wear characteristics of Al-Cu-Pb alloys | Manmohan Singh Dhillon | 1993 |
| 2. | Processing and properties of cemented tungsten carbide by precipitation route | Pankaj Kumar Singla | 1994 |
| 3. | Preparation of Sm-Fe-N powder by calciothermic reduction | Sanjeev Mahajan | 1994 |
| 4. | Microstructural characteristics of rapidly solidified aluminium based immisible alloys | Rakesh Kumar | 1995 |
| 5. | Microstructural characterisation of copper alloy powders used for bearing materials | Mandeep Juneja | 1997 |
| 6. | Wear characteristics of spheroidal graphite iron | Navdeep Sharma | 1998 |
| 7. | Morphology and tribological characteristics of steels | Vinay Kumar Gupta | 1998 |
| 8. | Effect of morphology of carbide on friction and wear in 0.86% plain carbon steel | Rajeev Chauhan | 1998 |
| 9. | Heat treatment and wear characteristics of eutectoid steel (normalized and annealed) | Preeti Bhasin | 1999 |
| 10. | Heat treatment and wear characteristics of eutectoid steel (quenched and tempered) | Ritu Singla | 1999 |
| 11. | Effect of curing tip distance and exposure time on microhardness of composite resins | Dr. Rajinder Kumar Bansal | 2001 |
| 12. | Studies of SiO2-Al2O3-MgO-B2O3 glasses for solid oxide fuel cell application | Neha Gupta | 2003 |
| 13. | Influence of binders on the magnetic properties of strontium ferrite and NdFeB compression bonded magnets | Himanshu Jindal | 2003 |
| 14. | Study of grain growth phenomenon in sintered soft ferrite magnets | Sameer Yadav | 2005 |
| 15 | Sintering characteristics of Al-Cu-Pb-Sn bearing alloys | Komal Manmeet | 2005 |
| 16. | Development of aluminium based bearing alloys | Kamalpreet Kaur | 2006 |
| 17. | Studies on permeability of Mn-Zn soft ferrites on variation in its basic composition | Ishwinderpal Singh | 2006 |
| 18. | Effect of alloying elements on Al-12.6%Si eutectic alloys | Alok Jain | 2007 |
| 19. | Study of photo catalytic behaviour of TiO2 nanopowders | Anmol Rattan Singh | 2007 |
| 20. | Development and characterization of nickel free duplex stainless steel | Alok Kumar | 2007 |
| 21. | Development of solid electrolyte material based on zirconia-bismuth oxide | Kapil Sood | 2007 |
| 22. | Synthesis and characterization of tungsten carbide nanoparticles | Ravinder Pal Singh | 2007 |
| 23. | Synthesis and characterization of Mn-Zn ferrite nanomaterials by chemical co-precipitation method | Ravi Prakash Srivastava | 2007 |
| 24. | Effect of specific surface area of in process calcined powder on electrical and magnetic properties of finished Mn-Zn ferrites | Sandeep Kumar Singh | 2008 |
| 25 | Strength and frature studies of steam turbine blade | Rahul Kaushik | 2008 |
| 26. | Synthesis of WC-nano ehaviour by reflux reaction | Raj Kumar Chopra | 2008 |
| 27. | Failure analysis of gear material | Vineet Pandey | 2009 |
| 28. | Development of low loss Mn-Zn ferrite material for high frequency applications | Karuna Sagar Chaturvedi | 2009 |
| 29 | Strength and Fracture Studies of Steam turbine Blade | Rahul Kaushik | 2009 |
| 30 | Preparation and Characterization of Sponge Iron | Arun Kumar Singh | 2009 |
| 31 | Failure Analysis of Gear Material | Vineet Pandey | 2009 |
| 32 | Synthesis of Tungsten Carbide Nanoparticles by Reflux Reaction | Raj Kumar Chopra | 2009 |
| 33 | Development of a low loss Mn-Zn Ferrite Material for High Frequency Applications | Karuna Sagar Chaturvedi | 2009 |
| 34 | Effect of Specific Surface Area of In-Process Calcined Powder on Electrical and Magnetic Properties of Finished Mn-Zn ferrites | Sandeep Kumar Singh | 2009 |
| 35 | Development of solid electrolyte material based on zirconia-bismuth oxide | Paramjyot Kumar Jha | 2010 |
| 36 | Spray forming and tribological behaviour of SiC particle reinforced Al-Si alloy | Ram Kishor Anant | 2010 |
| 37 | Sliding wear ehaviour of zircon sand reinforced LM13 alloy prepared by spray forming technique | Rashmi Mittal | 2010 |
| 38 | Single Phase Synthesis of Rutile Tio2 Nanoparticles | Rajani Sharma | 2010 |
| 39 | Single pot synthesis of biocompatible silver Nanocollodis | Poonam Benjwal | 2010 |
| 41 | Synthesis and photocatalytic studies of ZnO nanoparticles | Jagdeep Kaur | 2010 |
| 42 | Synthesis and photocatalytic studies of ZnO nanoparticles | Neeraj Mittal | 2010 |
| 43 | Wear characteristic of dual reinforced particles (DRP) Aluminium alloy. | Vipin Sharma | 2011 |
| 44 | Wear behaviour of dual particle size (DPS) Aluminium alloy. | Suresh singh | 2011 |
| 45 | Design of microwave sintering unit for development of Copper-chromium contact materials | Mukul Verma | 2011 |
| 46. | Wear characteristic of rutile reinforced aluminium composites. | Ravinder Singh | 2012 |
| 47. | Synthesis and Characterization of Tantalum Carbide nano particles | Navjot Kaur | 2012 |

#### Ph.D. Thesis

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| **S. No.** | **Title of the thesis** | **Name of the candidate** | **Year of registration/ completion** |
| 1. | Effect of Additions on the Magnetic Properties of Strontium Ferrite Permanent Magnets | Puneet Sharma | ***Awarded,2004*** |
| 2. | Thermomechanical Processing of HSLA  Steels | Sanjay Panwar | ***Awarded, 2006*** |
| 3. | Studies of Bismuth Based Electrolytes for its applications in Solid Oxide Fuel Cells | Ravikant | ***Awarded, 2008*** |
| 4. | Development of Strontium Hexaferrite Magnets from Celestite ore and Blue dust | Rajani Kant Tiwari | ***Awarded, 2008*** |
| 5. | Studies of SiO2-BaO-ZnO-M2O3-B2O3 (M=Al, Mn, Y, La) Based Glass Sealants | Anu Arora | ***Awarded, 2009*** |
| 6. | The study of Radiation Induced Modifications in some Natural and Artificial Silicate Glasses | Amanpreet Kaur Sandhu | ***Awarded, 2009*** |
| 7. | Analysis of Surface Integrity in Electrical Discharge Machining (EDM) process for Tungsten Carbide Material | C.P.Khatter | ***Awarded, 2010*** |
| 8. | Studies of SiO2-B2O3-MgO-SrO-A2O3 (A=Y, La, Al) Based glasses for SOFC Applications | Vishal Kumar | ***Awarded, 2010*** |
| 9. | Preparation and Characterization of Tungsten Carbide Micro/Nano Composites | Akshay Kumar  23-3-08 | ***Awarded, 2011***  ***16-9-11*** |
| 10 | Capping of ZnS Nano structures ; Optical and Morphological Studies | Manoj Kumar 14-10-7Sharma 8-8-8 | ***Awarded, 2011***  ***14-10-11*** |
| 11. | Development of Metal-matrix Composite by Rapid Solidification Process | Kamalpreet Kaur | ***Awarded, 2012*** |
| 12. | Synthesis and Characterization of Interconnect Materials: La1-x Mx TOy and Y1-x Mx TOy (M=Caor Sr; T=Ti, Nb) for SOFC | Jasmeet Kaur Gill | ***Awarded, 2012*** |
| 13. | Effect of Electrical Conductivity and Spatial Variability of Soil on Crop Productivity | Baban Kumar | ***Awarded, 2012*** |
| 14. | Investigations on Interfacial Interaction of Glass Sealants with Electrolyte and Interconnect for Solid Oxide Fuel Cells | Gurbinder Kaur | ***Awarded, 2012*** |
| 15. | Preparation and Characterisation of Silicate glasses for interface with steels | Bhupinder Kaur | ***Awarded, 2013*** |
| 16 | Characterization of reinforced nano Tungsten Carbide synthesised from wolframite with metal | Harjinder Singh | ***Awarded, 2013*** |
| 17 | Effect of Gamma and Heavy ions Irradiations on the Structural and Optical Properties of Heavy metal oxide Borosilicate Glasses | Ravneet Kaur | ***Awarded, 2014*** |
| 18 | Electromagnetic Effects on Seed Germination | Tarlochan Singh Mahajan | ***Awarded, 2014*** |
| 19 | Study of wear resistant Zircon sand reinforced aluminium matrix composites | Ranvir Singh Panwar | ***Awarded, 2014*** |
| 20 | Study of Alkaline earth metals substitution for Bismuth in bismuth baed mixed ion conductors | Samita | Ongoing (2010) |
| 21 | Studies on Lanthanum based ionic conductors as electrolyte materials | Kapil Sood | Ongoing (2010)  (U.R.B.1.11.2010) |
| 22 | Studies on Antimcrobial Properties of Metals and Metal Oxide Based Nanostructures | Chandani | Ongoing (2010)  (U.R.B. 1.11.2010) |
| 23 | Optical and morphological study of doped Y2O3 nanostructures | Deepak Kumar | Ongoing (2010) |
| 24 | Photoluminiscence and photocatalytic studies of doped and capped ZnO and CeO2 nanomaterials | Manish Mittal | Ongoing (2010) |
| 25 | Thermal and Elastic Properties of Solids and Geophysical minerals at elevated temperature and Pressure | Sanjay Kumar | Ongoing (2010) |
| 26 | Synthesis and Characterization of vanadium carbide nanoparticles | Mani Mahajan | Ongoing (2010) |
| 27 | Preparation and characterization of Barium hexaferrite (BaFe12O19) thick film for micro/millimetre wave device application | Samiksha Kumari | Ongoing (2010) |
| 28 | Effect of grain size and Gd-Co substitution on multiferroic BiFeO3 thin films | Shivani Sharma | Ongoing (2010) |
| 29 | Synthesis and characterization of CuS modified Na2S-P2S5 glasses for solid electrolytes | Paramjyot Kumar Jha | Ongoing (2011) |
| 30 | Photocatalytic studies of undoped and doped ZnS nanostructures | Jagdeep Kaur | Ongoing (2011) |
| 31 | Synthesis of Nano transition metal carbides by solvothermal route | Gaurav Singla | Ongoing (2011) |
| 32 | Development of Aluminium Foam materials for blast mitigation | Suresh Kumar | Ongoing (2011) |
| 33 | Optical and morphological study od doped nano CeO2 | Suninder  jeet kaur | Ongoing (2011) |
| 34 | Synthesis of Nano WC through reflux reactions | Loveleen Kaur Brar | Ongoing (2012) |

**Summer School / Winter School / Workshop / Conference Organised:**

1. Organised a workshop on ***Heat Treatment of Iron and Steel****s*for personnel working in industries on Dec. 21-22, 1995. In this workshop 21 participants of the cadre of General Manager to junior engineers from different industries participated.
2. Organised a ***National Conference on Materials and Related Technologies (NCMRT2003)*** on Sept. 19-20, 2003. In this conference 60 participants from all over the country presented their papers. 93 papers were received.
3. Organised a ***National Conference on Advances in Condensed Matter Physics (ACMP2005)*** on Feb. 11-12, 2005. In this conference 70 participants from all over the country presented their papers. 85 papers were received.
4. Organised a UGC sponsored Refresher Course on Recent development in Physics and Materials Science, December 12-31, 2005 (3 weeks). 35 participants from different colleges/universities/R & D organisation attended this course.
5. Organised a ***National Conference on Emerging Trends in Engineering Materials (NCETEM2007)*** on Feb. 1-3, 2007. In this conference 70 participants from all over the country presented their papers. 95 papers were received.
6. Organised a Workshop on *Emerging Trends in Nano Technology* on Nov. 20, 2007 in collaboration with Punjab Academy of Sciences, Patiala.
7. Organised Fifteenth ***National Seminar on Ferroelectrics and Dielectrics (NSFD15)*** 6-8 Nov, 2008. In this conference 60 participants from all over the country presented their papers
8. Organised ***23rd AGM of Materials Research Society of India (MRSI) Feb 13-15, 2012, Patiala***

**Summer School / Winter School / Workshop Attended:**

**Workshop:**

1. Attended a workshop-cum-seminar on **Scanning Electron Microscopy,** February 25-26, 1991, *Department of Metallurgical Engineering*, *I. T., B.H.U.* Varanasi - 221005
2. Attended a workshop on Synthesis**, Characterisation and Properties of Small Particles**, February 24-26, 1993, *School of Materials Science and Technology*, *I. T. B.H.U.* Varanasi -221005
3. Attended a workshop on **Heat Treatment and Surface Engineering of Iron and Steels (HTIS -94)** May 11-13, 1994, *National Metallurgical Laboratory*, Jamshedpur- 831007, Bihar
4. Attended a workshop on **Electron Microscopy: its application in Biological and Materials Science**, Nov 10-13, 1997 organised by *USIC*, Jadavpur University, Calcutta-700032
5. Attended a workshop on **Blood Transfusion medicine** on oct. 24, 1997 at Govt. medical College, Patiala. Sponsored by Department of Transfusion Medicine, Govt medical College, Patiala.
6. Attended national workshop on **University-Industry Interface-2001** on Feb. 20-21, 1998, at Punjab University, Chandigarh. Sponsored by AICTE.
7. Attended a workshop on **High Resolution NMR Spectroscopy of Polymers,** Dec 1-2, 2001 organised by *Department of Chemistry, IIT Delhi*
8. Attended a **user workshop** at Nuclear Science Centre New Delhi on Dec 17-18, 2004
9. Attended a **user workshop** at Nuclear Science Centre New Delhi on June 21-22, 2005
10. Attended a user workshop at Inter University Accelerator Centre, New Delhi on 7-8 July, 2008.

**Schools:**

1. **Metallurgical Failures and their Remedial Measures** from June 27, 1995 to July 11, 1995 organised by *Department of Metallurgical Engineering with QIP Centre*, University of Roorkee, Roorkee. (Two Weeks)
2. **Advanced Techniques for Characterization of Materials** from February 27, 1996 to June 11, 1996 organised by *Department of Physics,* *Indian Institute of Technology,* New Delhi. (Two Weeks)
3. **Induction Training Programme from** July 15, 1996 to August 3, 1996 organised by *Academic Staff College, Kurukshetra University*, Kurukshetra, (Three Weeks)
4. **Winter School on Industry Institute Parternership** From Feb 10–15, 1997 organized by *Thapar Institute of Engineering & Technology, Patiuala* (One Week*).*
5. Attended a panel discussion on **Science and Technology,** Nov. 25, 1997, organised by Punjab Academy of Science at Punjabi University, Patiala.
6. Attended a workshop on **Blood Transfusion Medicine** on Oct. 24, 1997 at Govt. Medical College, Patiala. Sponsored by Department of Transfusion Medicine, Govt. Medical College, Patiala.
7. Attended national conference on **University-Industry Interface-2001** on Feb. 20-21, 1998, at Punjab University Chandigarh. Sponsored by AICTE.
8. Attended international conference on **Trends in Mechanical Alloying: Science, Technology and Applications** Feb. 21-23, 2001, Hotel Amer, Jaipur.
9. Attended QIP short term course on **Nano Technology- Nanomaterials and their Applications** Feb. 21-25, 2005, QIP Center, IIT Roorkee.

**Course Materials Developed:**

1. Developed a course material on*Heat Treatment of Iron and Steels* under CEP programme. This gives the details of science and practice of Heat Treatment starting form the first fundamentals, going on to the specialised aspects and the recent developments and trends supported by appropriate case studies. The course material is most suitable for metallurgical /mechanical engineering students, personnel working in industries, research engineers, scientists and faculty members.
2. A similar course material on the topics *Heat Treatment of Non Ferrous Materials* and *Solidification and Castings of Metallic Melts*is in progress. These materials are being prepared under CEP programme.

**Book/ Monograph:**

1. [Advances in Polymeric Science](http://www.abebooks.com/servlet/BookDetailsPL?bi=7577937346&searchurl=an%3DSHISHIR%2BSINHA%252C%2BO%2BP%2BPANDEY%252C%2BVINAY%2BKUMAR%2BAND%2BPARMOD%2BKUMAR)

**Shishir Sinha, O.P. Pandey, Vinay Kumar and Parmod Kumar**

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1. Synthesis and biosensing applications of ZnS nanoparticles,

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Saarbrücken, Germany (ISBN: 978-3-8484-0487-2).

1. Top of Form

#### Details of Courses taught at different levels in the institute

#### UG Level

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Subject Code** | **Subject Name** |
| 1. | ME 008 | Industrial Metallurgy |
| 2. | ME 202 | Manufacturing Technology |
| 3. | EE 019 | Electrical Engineering Materials |
| 4. | ES 103 | Thermodynamics |
| 5. | ES 203 | Materials Science and Engineering |
| 6. | ES 206 | Electrical and Electronic Materials |

###### **PG Level**

**M.Sc (Materials Science Co-operative programme)**

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Subject Code** | **Subject Name** |
| 1. | MS 501 | Introductory Materials Science |
| 2. | MS 502 | Characterization and Evolution of Materials |
| 3. | MS 551 | Materials Processing and Manufacture |
| 4. | MS 554 | Physical Metallurgy |
| 5. | MS 651A | High Performance Ceramics |
| 6. | MS 651B | Composite Materials |
| 7. | MS 603 | Polymeric Solids |
| 8. | MS 601 | Physical Metallurgy |
| 9. | MS 653 | Amorphous and Defect Structure Solids |
| 10. | MS 652 | Materials Engineering |
| 11. | MS 653 | Mechanical Properties of Solids |
| 12. | MS 603 | Thermodynamics of Solids |
| 13. | MS 606 | Materials Science Lab I |
| 14. | MS 551 | Materials Processing and Manufacture |
| 15. | MS 555 | Materials Science Lab II |

**M.Tech. Materials Science and Engineering**

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Subject Code** | **Subject Name** |
| 1. | MS 505 | Materials Engineering |
| 2. | MS 565 | Composite Materials |
| 3. | MS 103 | Mechanical Behavior of Materials |
| 4. | MS 104 | Engineering Materials |
| 5. | MS 106 | Advanced Techniques for Materials Characterization |
| 6. | MS 112 | Nanomaterials and Nanotechnology |

**Details of Courses taught at different levels during last four years in the institute**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No.** | **Subject Code** | **Subject** | **P.G/U.G** | **Semester** | **Year** |
| 1. | DPM001 | Materials Characterization and Measurement Techniques | PG | II | 2010-11 |
| 2. | PMM-202 | Failure analysis | PG | II | 2010-11 |
| 3. | PMM-103 | Physical metallurgy | PG | I | 2010-11 |
| 4. | PMM104 | Advance Iron and Steel Making | PG | I | 2010-11 |
| 5. | PMM-202 | Failure analysis | PG | II | 2009-10 |
| 6. | PMM-103 | Physical metallurgy | PG | I | 2009-10 |
| 7. | PMM-101 | Structure & properties of materials | PG | I | 2009-10 |
| 8. | ES-203 | Materials science & engineering | UG | I | 2009-10 |
| 9. | MS-126 | Materials processing | PG | II | 2008-09 |
| 10. | MS-121 | Physical metallurgy | PG | I | 2008-09 |
| 11. | MS-106 | Advanced techniques for material characterization | PG | II | 2007-08 |
| 12. | MS-126 | Materials processing | PG | I | 2007-08 |
| 13. | MS-104 | Engineering materials | PG | I | 2007-08 |
| 14. | MS-106 | Advanced techniques for material characterization | PG | II | 2006-07 |
| 15. | ES-203 | Materials science & engineering | UG | I | 2006-07 |
| 16. | MS-118 | Materials processing | PG | I | 2006-07 |
| 17. | ES 203 | Materials Science and Engineering | U.G. | I | 2005-06 |
| 18. | MS 104 | Engineering Materials | P.G. | I | 2005-06 |
| 19. | ES 203 | Materials Science and Engineering | U.G. | II | 2005-06 |
| 20. | MS 106 | Advanced Techniques for Materials Characterization | P.G. | II | 2005-06 |
| 21. | MS 103 | Mechanical behavior of Materials | P.G | I | 2004-05 |
| 22. | MS 104 | Engineering Materials | P.G | I | 2004-05 |
| 23. | MS 106 | Advanced Techniques for Materials Characterization | P.G | II | 2004-05 |
| 24. | MS 112 | Nanomaterials and Nanotechnology | P.G | II | 2004-05 |
| 25. | ES 203 | Materials Science and Engineering | U.G | I | 2003-04 |
| 26. | ME 008 | Industrial Metallurgy | U.G | I | 2003-04 |
| 27. | EE 019 | Electrical Engineering Materials | U.G | II | 2003-04 |
| 28. | ES 203 | Materials Science and Engineering | U.G | II | 2003-04 |
| 29. | MS 505 | Materials Engineering | P.G | I | 2002-03 |
| 30. | ES 203 | Materials Science and Engineering | U.G | I | 2002-03 |
| 31. | MS 565 | Composite Materials | P.G | II | 2002-03 |
| 32. | ES 203 | Materials Science and Engineering | U.G | II | 2002-03 |

Apart from these the entire syllabus for B.Tech (Materials Science) of Punjab Technical University was developed as an expert. The entire course curriculum for M Sc and M Tech was designed for our School at institute level for all the interdisciplinary courses serving as an expert.

**List of Publications**

1. **O.P. Pandey,** Metallic Glasses, A Review *Trans. Indian Ceramic Society, 48(5) (1989) pp 79-86.* **(Impact Factor=0.132)**
2. **O.P. Pandey,** S.N. Ojha and T.R. Anantharaman, Rapid Solidification Processing of Metallic Glass Strip by the Planar Flow Casting Technique, *Trans. Ind. Inst. Metals, 44 (1) (1991) pp 9-15.* **(Impact Factor=0.135)**
3. **O.P. Pandey,** S.N. Ojha, E.S. Dwarakadasa and T.R. Anantharaman, Rapid Casting of Aluminium Foils by Planar Flow Casting Technique, *Indian Journal of Technology, 29 (4) (1991) pp 173-178.* **(Impact Factor=0.129)**
4. **O.P. Pandey** and S.N. Ojha, Production and Characterization of Rapidly Solidified Powders of Al-Si Alloys, *Powder Metallurgy International, 23 (5) (1991) pp 291-295.* **(Impact Factor=7.2)**
5. **O.P. Pandey,** Undercooling - A General Overview *Banaras Metallurgist 11 (1991) pp 75-107.* **(Impact Factor=0.0)**
6. **O.P. Pandey,** Limestone and its Derivative for steel making A General Overview *Ecology, 6 (2) (1991) pp 23-31.* **(Impact Factor=4.69)**
7. **O.P. Pandey,** S.N. Ojha and T.R. Anantharaman, Solidification of Under-cooled Melt of Mg-Cu Alloy Entrapped in its Primary Phase, *J. Materials Science Letter, 11 (18) (1992) pp 1260 -1262.* **(Impact Factor=1.4)**
8. P. Ramachandrarao, S.N. Ojha and **O.P. Pandey**, On the Production of Fine Droplet Entrained in a Metal-Matrix, *Phil. Mag. Lett. 66 (1) (1992) pp 33-38.* **(Impact Factor=1.53)**
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11. **O.P. Pandey** and R.C. Gupta, Preparation of Lime-Rich Sinter from waste Limestone chips for steel making, *Indian J. Engineering & Materials Science 1(12) (1994) pp 350-354.* **(Impact Factor=0.129)**
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28. A. Singh, S. B. Narang, K. Singh, P. Sharma and **O.P. Pandey*,***Structural, AC conductivity and dielectric properties of Sr-La hexa-ferrite*, The European Physical Journal Applied Physics, 33 (2006) 189-194.* **(Impact Factor=0.756)**
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37. V.K. Gupta, S. Ray and **O.P. Pandey,** Dry sliding wear characteristics of 0.13 wt % carbon steel, *Materials Science-Poland 26(3) (2008) 617-631*. **(Impact Factor=0.364)**
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58. R.K. Tiwary, S.P. Narayan and **O.P. Pandey,** Preparation of Strontium Hexaferrite Magnets from Celestite and Iron Ore fines by Mechano-chemical Route, *Mineral Processing and Extractive Metallurgy 118(4) (2009) 201-204.* **(Impact Factor=0.0)**
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65. Vishal Kumar, **O.P. Pandey** and K. Singh,Structural and optical properties of Barium Borosilicate glasses, *Physica B 405 (2010) 204-207.* **(Impact Factor=1.327)**
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74. Kamalpreet Kaur and **O.P. Pandey,** Wear and micro-structural characteristics of spray atomized zircon sand reinforced LM13 alloy, *Materialwissenschaft und Werkstofftechnik (MATWER), (Materials Science and Engineering) 41(7) (2010) 568-574.* **(Impact Factor=0.491)**
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# Message to Students & Community:

# Success of life is to work hard. Plan your activities as per preference and complete it in time framed model.

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