

## Curriculum Vitae

### HARPREET SINGH

Assistant Professor (Mechanical Engineering)

Indian Institute of Technology Ropar

Rupnagar-140001, Punjab, India

**Contact number:** +91-98557-09052 (M), +91-1881-242177 (O)

**Email:** harpreetsingh@iitrpr.ac.in

**Date of Birth & Sex:** 10.10.1971, Male

**Marital Status:** Married

### Field of Specialization

Surface Engineering-Degradation of Materials, High Temperature Corrosion and its Protection, Slurry Erosion of Hydraulic Turbines and its Control, Biomedical Coatings; Sustainable Manufacturing Technology-Modulation Assisted Machining; Friction-Stir Processing/Welding; Bioenergy Generation and Analysis

### Academic Record

Degree	Institution	University	Year
Ph.D.	Indian Institute of Technology Roorkee, Roorkee, UA, India.	Indian Institute of Technology Roorkee, Roorkee, UA, India.	2004-05
M.E.	GND Engineering College, Ludhiana, Punjab, India.	Panjab University, Chandigarh, India.	1998-99
B.E.	GZS College of Engineering & Technology, Bathinda, Punjab, India.	Punjabi University, Patiala, Punjab, India.	1993-94

**Ph. D. Thesis Title** : HOT CORROSION STUDIES ON PLASMA SPRAY COATINGS OVER SOME Ni- AND Fe-BASED SUPERALLOYS

### Teaching and Research Experience

Institution	Year (from-to)	Designation
Indian Institute of Technology Ropar, Rupnagar (Punjab) India	31.07-2009-Till Date	Assistant Professor
BBSB Engineering College, Fatehgarh Sahib (Punjab) India	10.05.2005-30.07.2009	Assistant Professor
BBSB Engineering College, Fatehgarh Sahib (Punjab) India	01.07.2001- 09.05.2005	Senior Lecturer
BBSB Engineering College, Fatehgarh Sahib (Punjab) India	06.02.1995- 30.06.2001	Lecturer
GTB Khalsa Polytechnic, Malout (Punjab) India	22.07.1994-02.02.1995	Lecturer

*\*includes deputation period from 30.07.2002-06.05.2005 to IITR, Roorkee for pursuing Ph.D. under QIP.*

### Administrative Experience

- Member, IIT Ropar Senate
- Faculty-Incharge-Cultural Affairs, IIT Ropar since 2009
- Member, Editorial Board, Inter, J. Surf. Eng. Mater. Technol.
- Faculty-Incharge-Training and Placement Cell, IIT Ropar for two years 2009-11
- Member, Board of Studies, Mechanical Engineering-Manufacturing Technology, Punjab University, Chandigarh for the term 1.4.2011 to 31.3.2012
- Member, Board of Studies, Mechanical/Production/Industrial Engineering, Punjab Technical University, Jalandhar since 2008
- Dean (R & D) from May, 2007 to July 2009, BBSB Engineering College, Fatehgarh Sahib

### Guidance of Ph.D. and M.Tech. Theses (Annexure A)

- **Ph.D.** : 4, Supervising 7
- **M. Tech.** : 8

### Subjects Taught

- Tribology
- Machine Design
- Mechanics of Solids
- Surface Engineering
- Product Design and Realization
- Manufacturing with Metallic Materials

### Membership of Professional Bodies

- Life Member, Tribology Society of India (TSI)
- Life Member, Indian Institute of Metals (IIM)
- Life Member, Punjab Academy of Sciences India
- Member, Institution of Engineers (AMIE) India
- Life Membership, Indian Society for Technical Education (MISTE) India
- Member, Society for Automotive Engineers (SAE)

### Short-Term Courses/Conferences Organized

- Coordinated a faculty development programme on 'Industrial Tribology' during January 3-8, 2011
- Organized a joint research colloquium for the faculty and students of Aston University, UK and IIT Ropar during April 12-17, 2010
- Coordinated a staff development programme on 'Thermal Spray Techniques and their Applications in Surface Engineering' during June 22, 2009 to July 3, 2009
- Organized an International Conference on 'Advances in Mechanical Engineering (AME2006)' during December 1-3, 2006 at BBSB Engineering College, Fatehgarh Sahib, India co-sponsored by DST, New Delhi
- Coordinated STC on 'Modeling and Simulation of Engineering Systems', 2002 sponsored by ISTE, New Delhi

### Short-Term Courses/Conferences/Seminars/Workshops Attended

- Short-Term Courses/Workshops: 08 (Annexure B)
- Seminars : 03
- International Conferences : 08 (Annexure C)
- National Conferences : 07

### Awards/Prizes/Citations

- **Career Award for Young Teachers (CAYT)** for the year 2006-07 by All India Council for Technical Education, New Delhi for his contribution to technical education and research proposal on 'Role of Post-Coating Treatments on the Erosion-Corrosion Performance of the Thermal Spray Coatings'. The award consists of a research and development grant of Rs. 10.5 lacs.
- **Maharashtra State National Award for the Best Research Work done by Teachers of Engineering Colleges** for the year 2007 by Indian Society for Technical Education, New Delhi.
- **Young Scientist Award** for the year 2006 by Punjab Academy of Sciences, Patiala during the 9<sup>th</sup> Punjab Science Congress held at Guru Nanak Dev Dental College and Research Institute, Sunam on February 8, 2006.
- The findings of the Ph.D. work along bio-data appeared in "**Meet Our New Colleagues**" column of **International Journal of Thermal Spray Technology, Vol. 14, No. 3, September 2005 published by ASM, USA.**
- **ARCI Best Technical Paper Award** worth Rs. 2500/- at International Symposium of Research Scholars on 'Material Science & Engineering,' December 20-22, 2004, IITM, Chennai, INDIA.
- **Certificate of Merit in recognition of research paper** at XIII National Conference of Indian Society of Mechanical Engineers (ISME-2003) held at Indian Institute of Technology Roorkee, Roorkee, December 2003.
- Was awarded **QIP fellowship by AICTE, New Delhi** for pursuing Ph.D. at Indian Institute of Technology Roorkee, Roorkee from July 2002 to July 2005.
- Working as a Reviewer for several journals of reputed publishers such as Sciencedirect/Elsevier/IMech

### Sponsored Projects-07

- Pursuing a research project entitled *“Development of Magnesium Alloy based In-situ Nanocomposites for improved Material Properties using Friction Stir Processing”* from DRDO, New Delhi worth **Rs. 14.10 lacs-2011**
- Pursuing a research project entitled *“Surface Engineering to Control Erosion-Corrosion of Steam Generating Plants by Nano-particle Coatings”* from Department of Science and Technology, Ministry of Science and Technology, Govt of India, New Delhi worth **Rs. 42.5 lacs-2010**
- A research project entitled *“Development and Performance Evaluation of Bioactive Coatings for Biomedical Applications”* under ISIRD Grant from Indian Institute of Technology Ropar worth **Rs. 7 lacs- (2009-2011)-Completed**
- A research project entitled *“Development of Erosion-Corrosion Resistant Thermal Spray Coatings for Power Plant Boilers”* from Department of Science and Technology, Ministry of Science and Technology, Govt of India, New Delhi under the SERC Fast Track Proposals for Young Scientists Scheme of DST, India worth **Rs. 7.68 lacs-(2006-2009)-Completed**
- A research project entitled *“Investigations on the Role of Cold Spray Coatings to Control Hot Corrosion of Steam Generating Plants”* from Council of Scientific and Industrial Research, New Delhi with Dr. Niraj Bala worth **Rs. 9 lacs-(2007-2010)-Completed**
- A research project entitled, *“Characterization & Machining Performance of Cryogenically Treated Cutting Tools”* under Research Promotion Scheme of All India Council for Technical Education, New Delhi with Dr Rupinder Singh worth **Rs. 8 lacs-(2008-2011)-Completed**

### Foreign Visits-09

- Attended International Thermal Spray Conference and Exposition (ITSC-2011) at **Hamburg, Germany** during September 27-29, 2011
- Visiting faculty at **Imperial College, London, UK** under UKIERI Program from March 14-25, 2011
- Attended Cold Spray Conference 2010 at **Akron, Ohio, USA** during September 27-28, 2010
- Attended the 49<sup>th</sup> Annual International Conference of Metallurgists (COM 2010) at **Vancouver, BC, Canada** during October 3-6, 2010
- Attended the 47<sup>th</sup> Annual International Conference of Metallurgists (COM 2008) at **Winnipeg, Manitoba, Canada** during August 24-27, 2008
- Attended International Thermal Spray Conference and Exposition (ITSC-2008) at **Maastricht, The Netherlands** during June 2-4, 2008
- Attended The Sixth Pacific Rim International Conference on Advanced Materials and Processing during November 5-9, 2007 at **ICC Jeju, Jeju, South Korea**
- **Visited ASB Industries Inc, Barberton, Ohio, USA** to have an interaction on Cold Spray Process during July 12-14, 2007
- Attended MS&T'06 Material Science and Technology 2006 Conference and Exposition during October 15-19, 2006 at **Cincinnati, Ohio, USA**

### Expert Lectures-10

- Delivered an expert lecture on **“Friction Stir Processing of a Mg-based Alloy”** during AICTE-sponsored Faculty development Program CGS Colleges, Ghuraun, India May 15, 2012
- Delivered an expert lecture on **“Friction Stir Processing of a Mg-based Alloy”** during National Conference on Advances and Futuristic Trends in Mechanical and Materials Engineering (AFTMME 2011) at Punjab Technical University, Jalandhar India on October 7, 2011
- Delivered an expert lecture on **“An Introduction to the Recent R&D Activities in Mechanical and Materials Engineering”** during Faculty Development Programme on “Advances in Materials and Manufacturing Technology” at Malout Institute of Management and Information Technology, Malout, India on July 19, 2011
- Delivered an expert talk on **“Recent R&D Activities in Mechanical Engineering”** during “National Conference on Advances in Mechanical Engineering (NCAME-2011)” at University Institute of Engineering and Technology, Punjab University, Chandigarh on May 21, 2011 and chaired one technical session
- Delivered a keynote address on **“Renewable Energy Potential”** during National Conference on “Advances in Renewable Energy Resources” at Indo-Global College of Engineering, Abhipur on April 29, 2011
- Delivered a keynote address on **“Advances in Mechanical Engineering”** during “National Seminar on Advances in Mechanical Engineering” at Institute of Engineering & Technology, Bhaddal, Ropar on April 26, 2011

- Delivered an invited lecture on “**Friction Stir Welding-Technology and Future Potential**” during National Conference on Advances and Futuristic Trends in Mechanical and Materials Engineering (AFTMME 2010) at Yadwindra College of Engineering, Talwandi Sabo, India on February 20, 2010
- Delivered an expert talk on “**Thermal Spray Technologies for Surface Engineering**” in “Winter Workshop in Mechanical Engineering Courses” organized by Department of Mechanical Engineering, Rayat Institute of Engineering & Information Technology, Roopnagar, India during January 13-16, 2009
- Delivered an expert lecture on “**Thermal Spray Technologies**” in ISTE-STTP on “Materials Degradation and Their Protection” organized by Department of Mechanical Engineering, Shaheed Bhagat Singh College of Engineering & Technology, Ferozepur, India during December 22-26, 2008
- Delivered an expert lecture on “**Use of Thermal Spray Technology to Enhance Working Life of Boiler Tubes**” in ISTE-STTP on “Reliability Centered Maintenance” organized by Department of Mechanical and Production Engineering, Guru Nanak Dev Engineering College, Ludhiana, India during December 11-15, 2006

#### Foreign Collaboration

- Principal Investigator, Aston University-IIT Ropar Bioenergy Research Centre

#### Industrial Collaboration

Working for the development of high temperature erosion/corrosion resistant thermal spray coatings for the power plant boilers and other similar applications in collaboration with the following industries:

- Guru Gobind Singh Thermal Super Power Plant, Ropar, Punjab, India
- Metallizing Equipment Company Pvt. Ltd, Jodhpur, Rajasthan, India
- ASB Industries, Inc, Barbeton, Ohio, USA

#### Research Publications

##### • Books-01

**Plasma Spray Coatings for Superalloys, VDM Publishing House, Germany, 2009**  
Harpreet Singh & Satya Prakash

##### • Handbook Chapter-01

**Metal Matrix Composites: Aluminum in Handbook of Composites, Wiley, 2011**  
Harpreet Singh and Brij Kumar Dhindaw

##### • International Refereed Journals-69

1. Bhandari, S., **Singh, H.**, Kansal, H. K. and Rastogi, V., (2012), “Slurry Erosion Performance Study of Detonation Gun Sprayed WC-10Co-4Cr Coatings on CF8M Steel under Hydro-accelerated Conditions”, **J. Thermal Spray Technol.**, *accepted for publication*.
2. Goyal, D., **Singh, H.**, Kumar, H. and Sawhney, B.K., (2012), “Slurry Erosive Wear Evaluation of HVOF-Spray Cr<sub>2</sub>O<sub>3</sub> Coating on Some Turbine Steels”, **J. Thermal Spray Technol.**, *accepted for publication*.
3. Goyal, D., **Singh, H.**, Kumar, H. and Sawhney, B.K., (2012), “Slurry Erosion Behaviour of HVOF Sprayed WC-10Co-4Cr and Al<sub>2</sub>O<sub>3</sub> + 13TiO<sub>2</sub> Coatings on Turbine Steel”, **Wear**, *accepted for publication*.
4. Grewal, H.S., Agarwal, A., **Singh, H.**, (2012), “Design and Development of High-Velocity Slurry Erosion Test Rig using CFD”, **J. Mater. Eng. Perfor.**, *accepted for publication*.
5. Singh, T. P., **Singh, H.** and Singh, H., (2012), “Characterization, Corrosion Resistance and Cell Response of High Velocity Flame Sprayed HA and HA/TiO<sub>2</sub> Coatings on 316L SS”, **J. Thermal Spray Technol.**, *accepted for publication*.
6. Singh, T. P., Singh, H. and **Singh, H.**, (2012), “Characterization and In-Vitro Corrosion Investigations of Thermal Sprayed Hydroxyapatite and Hydroxyapatite-Titania Coatings on Ti-Alloy”, **Metall. Mater. Trans. A**, *accepted for publication*.
7. Arora, H. S., **Singh, H.** and Dhindaw, B. K., (2012), “Numerical Simulation of Temperature Distribution using Finite Difference Equations and Estimation of the Grain Size during Friction Stir Processing”, **Mater. Sci. Eng. A**, Vol. 543, No. 1, pp. 231–242.

8. Arora, H. S., **Singh, H.** and Dhindaw, B. K., (2012), "Parametric Study of Friction Stir Processing of Magnesium Based AE42 Alloy", **J. Mater. Eng. Perfor.**, *accepted for publication*.
9. Singh, T. P., **Singh, H.** and Singh, H., (2012), "Characterization of Thermal Sprayed Hydroxyapatite Coatings on Some Biomedical Implant Materials", **J. Appl. Biomater. Biomech.**, *accepted for publication*.
10. Gill, S. S., Singh, J., **Singh, H.** and Singh, R., (2012), "Metallurgical and Mechanical Characteristics of Cryogenically Treated Tungsten Carbide (WC-Co)", **Inter. J. Advanced Manufacturing Technol.**, Vol. 58, No. 1 pp. 119-131.
11. Bala, N., **Singh, H.**, Prakash, S. and Karthikeyan, J., (2012), "Investigations on the Behavior of HVOF and Cold Sprayed Ni-20Cr Coating on T22 Boiler Steel in Actual Boiler Environment", **J. Thermal Spray Technol.**, Vol. 21, No. 1, pp. 144-158.
12. Arora, H. S., **Singh, H.** and Dhindaw, B. K., (2012), "Some Observations on Microstructural Changes in a Mg-based AE42 Alloy subjected to Friction Stir Processing", **Metall. Mater. Trans. B**, Vol. 43, No. 1, pp.92-108.
13. Grewal, H.S., Bhandari, S., **Singh, H.**, (2012), "Parametric Study of Slurry-Erosion of Hydroturbine Steels with and without Detonation Gun Spray Coatings using Taguchi Technique", **Metall. Mater. Trans. A**, *accepted for publication*.
14. Kaushal, G., **Singh, H.** and Prakash, S., (2012), "Performance of Detonation Gun Sprayed Ni-20Cr Coating on ASTM A213 TP347H Steel in A Boiler Environment", **J. Thermal Spray Technol.**, *accepted for publication*.
15. Kaur, M., **Singh, H.** and Prakash, S., (2012), "High-temperature Behavior of a High-Velocity Oxy-Fuel Sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr Coating", **Metall. Mater. Trans. A**, *accepted for publication*.
16. Bala, N., **Singh, H.** and Prakash, S., (2012), "Performance of Cold Sprayed Ni-20Cr and Ni-50Cr Coatings on SA 516 Steel in Actual Industrial Environment of a Coal Fired Boiler", **Mater. Corros.**, *accepted for publication*.
17. Bhandari, S., **Singh, H.**, Kansal, H. K. and Rastogi, V., (2011), "Slurry Erosion Behaviour of Detonation Gun Spray Al<sub>2</sub>O<sub>3</sub> and Al<sub>2</sub>O<sub>3</sub>-13TiO<sub>2</sub> Coated CF8M Steel under Hydro- accelerated Conditions", **Tribology Lett.**, *accepted for publication*.
18. Gill, S. S., Singh, R., Singh, J. and **Singh, H.**, (2012), "Adaptive Neuro-Fuzzy Inference System Modeling of Cryogenically Treated AISI M2 HSS Turning Tool for Estimation of Flank Wear", **Expert Systems with Applications**, Vol. 39, No. 4, pp. 4171-4180.
19. Arora, H. S., **Singh, H.** and Dhindaw, B. K., (2011), "Composite Fabrication using Friction Stir Processing - A Review", **Inter. J. Adv. Manu. Technol.**, *accepted for publication*.
20. Kaur, M., **Singh, H.** and Prakash, S., (2011), "Surface Engineering Analysis of Detonation-gun Sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr Coating under High-Temperature Oxidation and Oxidation-Erosion Environments", **Surf. Coat. Technol.**, Vol. 206, pp. 530-541.
21. Gill, S. S., Singh, J, Singh, R. and **Singh, H.**, (2011), "Effect of Cryogenic Treatment on AISI M2 High Speed Steel-Metallurgical and Mechanical Characterization", **J. Mater. Eng. Perfor.**, *accepted for publication*.
22. Bhandari, S., **Singh, H.**, Kansal, H. K. and Rastogi, V., (2012) "Slurry Erosion Studies of Hydroturbine Steels under Hydro Accelerated Conditions", **Proc. Instn Mech. Engrs, Part J: J. Eng. Tribology**, Vol. 226, No. 3, pp. 239-250.
23. Kaushal, G., **Singh, H.** and Prakash, S., (2011), "High Temperature Erosion-Corrosion Performance of HVOF sprayed Ni-20 Cr coating in Actual Boiler Environment", **Metall. Mater. Trans. A**, Vol. 42, pp. 1836-1846.
24. Kaushal, G., **Singh, H.** and Prakash, S., (2011), "Comparative High Temperature Analysis of HVOF Sprayed and Detonation Gun Sprayed Ni-20Cr Coating in Laboratory and Actual Boiler Environments", **Oxidation of Metals**, *accepted for publication*.
25. Kaushal, G., **Singh, H.** and Prakash, S., (2011), "Surface Engineering, by Detonation-Gun Spray Coating, of 347H Boiler Steel to Enhance its High Temperature Corrosion Resistance", **Mater. High Temp.**, *accepted for publication*.
26. Bala, N., **Singh, H.** and Prakash, S., (2011), "Characterisation and High Temperature Oxidation Behaviour of Cold Sprayed Ni-20Cr and Ni-50Cr Coatings on Boiler Steels", **Metall. Mater. Trans. A**, *accepted for publication*.
27. Goyal, D., **Singh, H.** and Kumar, H., (2011), "An Overview of Slurry Erosion Control by the Application of High Velocity Oxy Fuel Sprayed Coatings", **Proc. Instn Mech. Engrs, Part J: J. Eng. Tribology**, Vol. 225, No. 11, pp. 1092-1105.
28. Kaushal, G., **Singh, H.** and Prakash, S., (2011), "High Temperature Corrosion Behavior of HVOF-Sprayed Ni-20Cr Coating on Boiler Steel in Molten Salt Environment at 900°C", **Inter. J. Surf. Sci. Eng.**, Vol. 5, Nos. 5-6, pp. 415-433.

29. Singla, M. K., **Singh, H.** and Chawla, V., (2011), "Thermal Sprayed CNT Reinforced Nanocomposite Coatings – A Review", **J. Minerals Mater. Charact. Eng.**, Vol. 10, No.8, pp.717-726.
30. Gill, S. S., Singh, J., Singh, R., and **Singh, H.**, (2011), "Metallurgical Principles of Cryogenically Treated Tool Steels- A Review on Current State of Science", **Inter. J. Advanced Manufacturing Technol.**, Vol. 54, Nos.1-4, pp. 59-82.
31. Singh, S., Pandey, R. and **Singh, H.**, (2011), "Design and Performance Analysis of Hollow Helical Spring made from Isotropic Materials", **Journal of Engineering, Design and Technology**, *accepted for publication* in Vol. 10, No. 01.
32. Singh, S., Kulkarni, K. V., Pandey, R. and **Singh, H.**, (2012), "Buckling Analysis of Thin Rectangular Plates with Cutouts subjected to Partial Edge Compression using FEM", **Journal of Engineering, Design and Technology**, Vol. 10, No. 1, pp. 128-142.
33. Bala, N., **Singh, H.** and Prakash, S., (2011), "Comparative Performance of Cold Sprayed Ni-20Cr and Ni-50Cr Coatings on T22 Boiler Steel in Different Aggressive Environments", **Inter, J. Surf. Eng. Mater. Technol.**, Vol. 1, No. 1, pp. 12-16.
34. Kaur, M., **Singh, H.** and Prakash, S., (2011), "Studies on Role of Detonation-Gun Sprayed WC-Co Coatings to Combat High Temperature Corrosion of Boiler Steel", **Inter, J. Surf. Eng. Mater. Technol.**, Vol. 1, No. 1, pp. 33-38.
35. Arora, H.S., Bala, N. and **Singh, H.**, (2010), "Wear Performance of Cold Spray Ni-20Cr Coating on T-22 and SA-516 Boiler Steels", **J. Tribology Surf. Eng.**, Vol. 1, No. 3-4.
36. Kaur, M., **Singh, H.**, Singh, B. and Singh, B., (2010), "Studies on the Sliding Wear Performance of Plasma Spray Ni-20Cr and Ni<sub>3</sub>Al Coatings", **J. Thermal Spray Technol.**, Vol. 19, Nos. 1-2, pp. 378-383.
37. Bala, N., **Singh, H.** and Prakash, S., (2010), "High Temperature Corrosion Behavior of Cold Spray Ni-20Cr Coating on Boiler Steel in Molten Salt Environment at 900 °C", **J. Thermal Spray Technol.**, Vol. 19, Nos. 1-2, pp. 110-118.
38. Gill, S. S., Singh, J., **Singh, H.**, and Singh, R., (2010), "Investigation on Wear Behaviour of Cryogenically Treated TiAlN Coated Tungsten Carbide Inserts in Turning", **Inter. J. Machine Tools & Manufacture**, 10.1016/j.ijmachtools.2010.10.003.
39. Gitanjali, **Singh, H.**, Singh, S. and Prakash, S., (2010), "Effect of Superficially Applied Y<sub>2</sub>O<sub>3</sub> Coating on High Temperature Corrosion Behaviour of Ni-Base Superalloys", **Metall. Mater. Trans. A**, Vol. 27, No.2, pp. 109-116.
40. Kaur, M., **Singh, H.** and Prakash, S., (2010), "Role of Detonation-Gun Spray Cr<sub>3</sub>C<sub>2</sub>-NiCr Coating in Improving High Temperature Corrosion Resistance of SAE-213-T22 and SAE-347H Steel in the Presence of Na<sub>2</sub>SO<sub>4</sub>-82%Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> Salt Deposits", **Surface Engineering**, Vol. 26, No. 6, pp. 428-439.
41. Bala, N., **Singh, H.** and Prakash, S., (2010), "Accelerated Hot Corrosion Studies of Cold Spray Ni-50Cr Coating on Boiler Steels", **Mater. Design**, Vol. 31, pp. 244-253.
42. Gill, S. S., Singh, R., **Singh, H.** and Singh, J., (2009), "Wear Behaviour of Cryogenically Treated Tungsten Carbide Inserts under Dry and Wet Turning Conditions", **Inter. J. Machine Tools Manufacture**, Vol. 49, No. 304, pp. 256-260.
43. **Singh, H.**, Gitanjali, Singh, S. and Prakash, S., (2009), "High Temperature Corrosion Behaviour of Some Fe-, Co- and Ni-base Superalloys in the presence of Y<sub>2</sub>O<sub>3</sub> as Inhibitor", **Appl. Surf. Sci.**, Vol. 255, No. 15, pp. 7062-7069.
44. Bala, N., **Singh, H.** and Prakash, S., (2009), "High-temperature Oxidation Studies of Cold-sprayed Ni-20Cr and Ni-50Cr Coatings on SAE 213-T22 Boiler Steel", **Appl. Surf. Sci.**, Vol. 255, No. 15, pp. 6862-6869.
45. Kaur, M., **Singh, H.** and Prakash, S., (2009), "High Temperature Corrosion Studies of HVOF Sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr Coating on SAE-347H Boiler Steel", **J. Thermal Spray Technol.**, Vol. 18, No. 4, pp. 619-632.
46. Gill, S. S., **Singh, H.**, Singh, R. and Singh, J., (2009), "Cryoprocessing of Cutting Tool Materials-A Review", **Int. J. Adv. Manuf. Technol.**, Vol. 48, No. 1–4, pp. 175–192.
47. Kaur, M., **Singh, H.** and Prakash, S., (2008), "A Survey of the Literature on the Use of High Velocity Oxy-Fuel Spray Technology for High Temperature Corrosion and Erosion-Corrosion Resistant Coatings", **Anti Corros. Method M.**, Vol. 55, No. 2, pp. 86-96.
48. Gitanjali, **Singh, H.** and Prakash, S., (2008), "Effect of Superficially applied ZrO<sub>2</sub> Inhibitor on the High Temperature Corrosion Performance of Some Fe-, Co- and Ni-Base Superalloys", **Appl. Surf. Sci.**, Vol. 254, No. 20, pp. 6653-6661.
49. Singh, S., Singh, B. and **Singh, H.**, (2008), "Design of an Adjustable Roller Chain Coupling for Shafts of different Diameters", **Inter. J. Applied Eng. Research**, Vol. 3, No. 11, pp. 1581-1590.

50. **Singh, H.**, Grewal, M. S., Sekhon, H. S. and Rao, R. G., (2008), "Sliding Wear Performance of High-Velocity Oxy-Fuel Spray  $\text{Al}_2\text{O}_3/\text{TiO}_2$  and  $\text{Cr}_2\text{O}_3$  coatings", **Proc. Instn Mech. Engrs, Part J: J. Engineering Tribology**, Vol. 222, pp. 601-610.
51. **Singh, H.**, Puri, D. and Prakash, S., (2007), "Some Observations on the High Temperature Oxidation behaviour of Plasma Sprayed  $\text{Ni}_3\text{Al}$  Coatings", **Mater. Sci. Eng. A**, Vol. 444, No. 1-2, pp. 242-250.
52. Sidhu, B.S., **Singh, H.**, Puri, D. and Prakash, S., (2007), "Wear and Oxidation behaviour of Shrouded Plasma Sprayed Fly Ash Coatings", **Tribology Inter.**, Vol. 40, pp. 800-808.
53. **Singh, H.**, Puri, D., Prakash, S. and Hira, D.S., (2007), "Investigations on the Role of Plasma Sprayed  $\text{NiCrAlY}$  and  $\text{Ni-20Cr}$  Coatings to combat Hot Corrosion", **Mater. Sci. Technol.**, Vol. 23, No. 6, pp. 736-744.
54. Kaur, M., **Singh, H.** and Prakash, S., (2007), "Use of High Velocity Oxy-Fuel Spray Technology to Combat Hot Corrosion and Erosion-Corrosion of Materials", **Trans. Indian Inst. Met.**, Vol. 60, No. 6, pp. 587-597.
55. **Singh, H.**, Sidhu, B.S., Puri, D. and Prakash, S., (2007), "Use of Plasma Spray Technology for deposition of High Temperature Oxidation/Corrosion Resistant Coatings -A Review", **Mater. Corros.**, Vol. 58, No. 2, pp. 92-102.
56. **Singh, H.**, Puri, D., Prakash, S. and Maiti, R., (2007), "Characterization of Oxide Scales to evaluate High Temperature Oxidation behavior of  $\text{Ni-20Cr}$  Coated Superalloys", **Mater. Sci. Eng. A**, Vol. 464, Nos. 1-2, pp. 110-116.
57. **Singh, H.**, Puri, D., Prakash, S. and Ghosh, T. K., (2007), "Hot Corrosion of A Plasma Sprayed  $\text{Ni}_3\text{Al}$  Coating on A Ni-Base Superalloy", **Mater. Corros.**, Vol. 58, No. 11, pp. 857-866.
58. Bala, N., **Singh, H.** and Prakash, S., (2007), "An Overview of Cold Spray Technique", **Mater. Sci. Forum**, Vols. 561-565, pp. 2419-2422.
59. Kaur, M., **Singh, H.** and Prakash, S., (2007), "Some Observations regarding Erosion-Corrosion Performance of HVOF-Sprayed  $\text{Cr}_3\text{C}_2$ -  $\text{NiCr}$  and  $\text{Cr}_3\text{C}_2$ -  $\text{NiCr-(25) WC-Co}$  coatings in Actual Boiler Environment", **Adv. Mater. Research**, Vols. 26-28, pp. 1345-1348.
60. **Singh, H.**, Puri, D. and Prakash, S., (2007), "An Overview of  $\text{Na}_2\text{SO}_4$  and/or  $\text{V}_2\text{O}_5$  Induced Hot Corrosion of Fe- and Ni-based Superalloys," **Rev. Advanced Mater. Sci.**, Vol. 16, Nos. 1-2, pp. 27-50.
61. Bala, N., **Singh, H.** and Prakash, S., (2007), "An Overview of Characterisations and High Temperature Behaviour of Thermal Spray  $\text{NiCr}$  Coatings", **Inter. J. Mater. Sci.**, Vol. 2, No. 3, pp. 201-218.
62. **Singh, H.**, Puri, D., Prakash, S. and Rao V.V.R., (2006), "On the High-Temperature Oxidation Protection Behaviour of Plasma Sprayed Stellite-6 Coatings", **Metall. Mater. Trans. A**, Vol. 37, pp. 3047-3056.
63. **Singh, H.**, Puri, D., Prakash, S. and Phase, D.M., (2006), "Cyclic Oxidation Behavior of some Plasma Sprayed Coatings in  $\text{Na}_2\text{SO}_4$ -60% $\text{V}_2\text{O}_5$  Environment", **J Mater. Eng. Perfor.**, Vol 15, No. 6, pp. 729-741.
64. **Singh, H.**, Puri, D., Prakash, S. and Srinivas, M., (2006), "Characterisation of High Temperature Oxide Scales for Plasma Sprayed  $\text{NiCrAlY}$  coated Ni- and Fe-base Superalloys", **Anti Corros. Method M.**, Vol. 53, No. 5, pp. 283-295.
65. **Singh, H.**, Puri, D. and Prakash, S., (2006), "High Temperature Oxidation Behaviour of Plasma Sprayed  $\text{NiCrAlY}$  Coatings on Ni-Based Superalloys in Air", **Trans. Indian Inst. Met.**, Vol. 59, pp. 215-227.
66. **Singh, H.**, Puri, D. and Prakash, S., (2005), "Some Studies on Hot Corrosion Performance of Plasma Sprayed Coatings on a Fe-Based Superalloy", **Surf. Coat. Technol.**, Vol. 192, No. 1, pp. 27-38.
67. **Singh, H.**, Puri, D. and Prakash, S., (2005), "Studies of Plasma Spray Coatings on a Fe-base Superalloy, their Structure and High Temperature Oxidation Behaviour", **Anti Corros. Method M.**, Vol. 52, No. 2, pp. 84-95.
68. Prakash, S., Puri, D. and **Singh, H.**, (2005), "Hot Corrosion Behaviour of Plasma Sprayed Coatings on a Ni-Based Superalloy in  $\text{Na}_2\text{SO}_4$  -60% $\text{V}_2\text{O}_5$  Environment", **ISIJ Int.**, Vol.45, No.6, pp. 886-895.
69. **Singh, H.**, Puri, D. and Prakash, S., (2005), "Corrosion Behaviour of Plasma Sprayed Coatings on a Ni-base Superalloy in  $\text{Na}_2\text{SO}_4$ -60% $\text{V}_2\text{O}_5$  Environment at  $900^\circ\text{C}$ ", **Metall. Mater. Trans. A**, Vol. 36, No 4, pp. 1007-1015.

- **International Conferences-43**

1. Kaur, M., **Singh, H.** and Prakash, S., (2011), "Erosion-corrosion Performance of Detonation-gun Spray WC-Co Coatings on ASTM-SA-213-T22 and SAE-347H Boiler Steels in Actual Boiler Conditions", Proc. 'International Conference on Advances in Materials and Materials Processing (ICAMMP 2011)', December 9-11, held at Indian Institute of Technology Kharagpur, WB, India, pp. 137-138.
2. Kaur, M., **Singh, H.**, and Prakash, S., (2011), "High Temperature Resistant Thermal Spray Coatings- Present Status and Future Trends", presented at 'International Symposium on Surface Protective Coatings and Indo-German Conference on Surface Engineering', December 7-9, 2011, held at Bangalore by SSPC India Chapter.
3. Bala, N., **Singh, H.** and Prakash, S., (2011), "Performance of HVOF and Cold Sprayed Ni-20Cr Coatings in Aggressive Molten Salt Environment at 900°C under Cyclic Conditions", Proc. 'International Thermal Spray Conference (ITSC 2011)', September 27-29, held at Congress Center, Hamburg, Germany.
4. Kaushal, G., **Singh, H.** and Prakash, S., (2011), "Corrosion Behaviour of HVOF sprayed Ni-20Cr Coating in a Molten Salt Environment at 900°C", Proc. 'International Thermal Spray Conference and Exposition (ITSC 11)', September 27-29, held at Hamburg, Germany, pp. 1219-1224.
5. Grewal, H.S., **Singh, H.**, and Agrawal, A., (2012), "Numerical Simulation of Erosion Using Computational Fluid Dynamics", Proc. 'Symposium: CFD Modeling and Simulation in Materials Processing, TMS Annual Meeting & Exhibition', March 11-15, held at Orlando, FL, USA.
6. Joshi, R. S., and **Singh, H.**, (2011), "Piezoelectric Transducer Based Devices for Development of A Sustainable Machining System - A Review", Applications of Ferroelectrics (ISAF/PFM), 2011 International Symposium on Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials, Vancouver, BC, Canada, pp. 1-4, July 24-27, doi: 10.1109/ISAF.2011.6014114, URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6014114&isnumber=6013977>.
7. Bhandari, S., Grewal, H. S., **Singh, H.** and Kansal, H.K. (2011), "An Overview on Solid Particle/Slurry Erosion of Uncoated Materials and Detonation Gun Sprayed Erosion Resistant Coatings", International Conference on Emerging Trends in Mechanical Engineering (ICETME-2011), February 24-26, held at Thapar University, Patiala, Punjab, India, pp. 275-283.
8. Singh, H., Chibber, R., **Singh, H.** and Bhandari, S. (2011), "Sliding Wear Performance of Detonation Spray Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and Hydroxyapatite Hybrid Coatings", International Conference on Emerging Trends in Mechanical Engineering (ICETME-2011), February 24-26, held at Thapar University, Patiala, Punjab, India, pp. 397-405.
9. Kaushal, G., **Singh, H.** and Prakash, S., (2010), "Comparative High Temperature Oxidation Behaviour of Ni-20Cr Coating Deposited by High-Velocity-Oxy-Fuel and Detonation Gun Spray Techniques", Proc. '21<sup>st</sup> Advanced Aerospace Materials and Processes Conference & Exposition (AeroMat)', June 21-24, held at Bellevue, WA, USA, pp. 53.
10. Kaushal, G., **Singh, H.** and Prakash, S., (2010), "Cyclic Oxidation Behavior of HVOF-Sprayed Ni-20Cr Coating on ASTM-SA213-T22 Boiler Steel at 900°C", Proc. 'International Thermal Spray Conference and Exposition (ITSC 10)', May 03-05, held at Raffles City, Singapore, pp. 668-672.
11. Bala, N., **Singh, H.** and Prakash, S., (2010), "Erosion-Corrosion Behaviour of Cold Spray Ni-20Cr Coating on SA 516 Steel in Actual Boiler Environment", Proc. '49<sup>th</sup> Annual International Conference of Metallurgists (COM 2010)', October 3-6, held at Vancouver, BC, Canada.
12. Bala, N., **Singh, H.** and Prakash, S., (2010), "Evaluation of Hot-corrosion Performance of Cold Spray Ni-20Cr Coating on SAE 213-T22 Boiler Steel", Presented in 'The Cold Spray Conference-2010', September 27-28, held at Akron, Ohio, USA.
13. Kaushal, G., **Singh, H.** and Prakash, S., (2010), "Cyclic Oxidation Behavior of Detonation Gun Sprayed Ni-20Cr Coating on a Boiler Steel at 900°C", TMS 2010, 139<sup>th</sup> Annual Meeting & Exhibition, Seattle, WA, USA, Supplemental Proceedings, Volume 3: General Paper Selections, pp. 307-314.
14. Singh, S., **Singh, H.** and Pandey, R., (2010), "Design of T-Slotted Type Variable Flange Coupling for Shafts of Different Diameters", Proc. '3<sup>rd</sup> International Conference on Advances in Mechanical Engineering', January 4-6 held at Sardar Vallabhbhai National Institute of Technology, Surat (Gujarat) India, pp. 367-371.
15. Bhandari, S., Grewal, H.S., **Singh, H.**, and Kansal, H.K., (2010), "To Investigate Slurry Erosion Performance of Hydroturbine Steel and Detonation gun coating using Taguchi Method", Proc. '2<sup>nd</sup> International Conference on Production and Industrial Engineering (CPIE 2010)', December 3-5, held at NIT Jalandhar, Punjab, India, pp. 261-268.
16. Bhandari, S., Grewal, H.S., **Singh, H.**, and Kansal, H.K., (2010), "Slurry Erosion Performance Study of 13Cr4Ni and 16Cr5Ni Steels using Taguchi Methodology", Proc. 'International

- Conference on Emerging Trends in Mechanical Engineering (ICETME 2011)', February 24-26, held at Thapar University, Patiala, Punjab, India, pp. 1025-1033.
17. Kaur, M., **Singh, H.**, and Prakash, S., (2010), "Erosion-corrosion Behaviour of HVOF Sprayed  $\text{Cr}_3\text{C}_2$ -NiCr Coatings on SAE-347H Steel in Actual Boiler Environment", presented at 'International Conference & Exposition on Corrosion (CORCON 2010)', during September 23-26, held at Goa, India.
  18. Kaur, M., **Singh, H.**, and Prakash, S., (2009), "Evaluation of High Temperature Oxidation Behaviour of Detonation-gun Spray WC-Co coatings on SAE-213-T22 Boiler Steel in Air Environment", presented at 'International Conference & Exposition on Corrosion (World CORCON 2009)', September 29-October 1, held at Mumbai, India.
  19. Gitanjaly, **Singh, H.** and Prakash, S., (2009), "High Temperature Corrosion of Some Superalloys in the Presence of MgO as an Oxide Additive", Proc. 'Material Science and Technology (MS&T) 2009 Conference and Exposition,' October 25-29 held at Pittsburgh, Pennsylvania, USA, Vol. 3, pp. 1939-1950.
  20. Kaushal, G., **Singh, H.** and Prakash, S., (2009), "A Comparative Study on Role of Zirconium as Minor Addition in HVOF-Spray Ni-20Cr Coatings in Enhancing Life of Boiler Steel", 'Thermal Spray 2009: Proceedings of the International Thermal Spray Conference (ITSC2009),' May 4-7, held at Las Vegas, Nevada, USA, pp. 685-690.
  21. Kaur, M., **Singh, H.**, Singh, B. and Singh, B., (2009), "Studies on the Sliding Wear Performance of Plasma Spray Ni-20Cr and  $\text{Ni}_3\text{Al}$  Coatings", 'Thermal Spray 2009: Proceedings of the International Thermal Spray Conference (ITSC2009),' May 4-7, held at Las Vegas, Nevada, USA, pp. 1169-1174.
  22. Sarao, T.P.S., Singh, H., Singh, H., **Saheet H.S.** and Chhibber R., (2009), "Surface Modification Techniques for Metallic Implants used in Biomedical Applications", Proc. Materials Science & Technology Conference (MS&T09), October 25-29, held at Pittsburgh, USA, pp. 2542-2553.
  23. Bala, N., **Singh, H.** and Prakash, S., (2009), "High Temperature Corrosion Behavior of Cold Spray Ni-20Cr Coating on Boiler Steel in Molten Salt Environment at 900 °C", 'Thermal Spray 2009: Proceedings of the International Thermal Spray Conference (ITSC2009),' May 4-7, held at Las Vegas, Nevada, USA, pp. 679-684.
  24. Singh, S. and **Singh, H.**, (2009), "Design and Static Stress Analysis of T-Slotted Type Variable Flange Coupling", Pro. 'ICCMS09', December 1-5, IIT Bombay, INDIA, pp.107-08.
  25. Kaur, M., **Singh, H.** and Prakash, S., (2008), "High Temperature Oxidation Behaviour of  $\text{Cr}_3\text{C}_2$ -NiCr Coatings deposited by High Velocity Oxy-Fuel (HVOF) Technology", Proc. '47<sup>th</sup> Annual International Conference of Metallurgist (COM 2008)', August 24-27, held at Winnipeg, Manitoba, Canada, pp. 31-42.
  26. Kaushal, G., **Singh, H.** and Prakash, S., (2008), "Role of HVOF-spray NiCr Coatings to Control High Temperature Oxidation of Some Boiler Steels", Proc. 'International Thermal Spray Conference and Exposition (ITSC2008),' June 2-4, held at Maastricht, The Netherlands, pp. 57.
  27. Kaur, M., **Singh, H.** and Prakash, S., (2008), "Hot Corrosion and High Temperature Oxidation Performance of WC-Co Coatings by Detonation-gun Spray on A Boiler Steel", Proc. 'International Thermal Spray Conference and Exposition (ITSC2008),' June 2-4, held at Maastricht, The Netherlands, pp. 18.
  28. Kaushal, G., **Singh, H.** and Prakash, S., (2008), "Use of Detonation Spray Gun, a Thermal Spraying Technique in Enhancing Life of Boiler Steels-An Overview", Proc. 'ICRDME-2008,' February 7-9, held at SUS College of Engineering and Technology, Tangori, Mohali, INDIA, pp.470-473.
  29. Bala, N., **Singh, H.** and Prakash, S., (2008), "Deposition and Characterisation of NiCr Coatings on Boiler Steels by Cold Spray Technique", Proc. 'ICRDME-2008,' February 7-9, held at SUS College of Engineering and Technology, Tangori, Mohali, INDIA, pp.448-453.
  30. Gitanjaly, **Singh, H.** Sharma, R. and Prakash, S., (2008), "High Temperature Corrosion Behavior of Some Ni-Base Superalloys in the presence of  $\text{ZnSO}_4$  as an inhibitor", Proc. 'Material Science and Technology (MS&T) 2008 Conference and Exposition: Materials & Systems: Enabling Surface Coating Systems: Science and Technology,' September 5-9 held at Pittsburgh, Pennsylvania, USA.
  31. Bala, N., **Singh, H.** and Prakash, S., (2007), "Behaviour of NiCr Coatings under Different Environments", Proc. 'Material Science and Technology (MS&T) 2007 Conference and Exposition: Energy,' September 16-20 held at Detroit, Michigan, USA, pp.53-66.
  32. Gitanjaly, **Singh, H.** Bala, N. and Prakash, S., (2007), "Effect of  $\text{MnO}_2$  Additions on the Hot Corrosion Behaviour of Some Fe-, Co- and Ni-base Superalloys", Proc. 'Material Science and

- Technology (MS&T) 2007 Conference and Exposition: Fundamentals and Characterization,' September 16-20 held at Detroit, Michigan, USA, pp.479-492.
33. Kaushal, G., **Singh, H.** and Prakash, S. (2007), "Application of High-Velocity Oxy-Fuel (HVOF) Thermal Spray Technique in Enhancing Life of Boiler Steels-An Overview", Proc. 'International Conference : Metals and Alloys: Past Present and Future (METALLO 2007)', December 07-10, held at IIT Kanpur, India, P-15.
  34. Kaur, M., **Singh, H.**, and Prakash, S., (2007) "Some Observations regarding Erosion-Corrosion Performance of HVOF-Sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr and Cr<sub>3</sub>C<sub>2</sub>-NiCr-(25)WC-Co coatings in Actual Boiler Environment", Proc. 'The Sixth Pacific Rim International Conference on Advanced Materials and Processing', November 5-7, ICC Jeju, Jeju Island, Korea.
  35. Bala, N., **Singh, H.** and Prakash, S., (2007), "An Overview of Cold Spray Technique", Proc. 'The Sixth Pacific Rim International Conference on Advanced Materials and Processing', November 5-7, ICC Jeju, Jeju Island, Korea.
  36. **Singh, H.**, Hira, D.S., Puri, D. and Prakash, S. (2006), "Characterisation of Oxide Scales for Plasma Sprayed Ni-20Cr Coatings Oxidized at 900°C under Cyclic Conditions", Proc. MS&T'06 Material Science and Technology 2006 Conference and Exposition: Processing, October 15-19 held at Cincinnati, Ohio, USA, pp.315-323.
  37. **Singh, H.**, Puri, D. and Prakash, S., (2006), "Cyclic Oxidation Behaviour of Plasma Sprayed Stellite-6 Coated Ni-base Superalloys", Proc. International Thermal Spray Conference and Exposition (ITSC 2006), May 15-17, held at Seattle, Washington, USA.
  38. Bala, N., **Singh, H.** and Prakash, S., (2006), "Thermal Spray Coating Processes for Steam Generating Plants", Proc. International Conference on 'Advances in Mechanical Engineering (AME2006)', December 1-3, held at BBSB Engg. College, Fatehgarh Sahib, INDIA, pp.275-280.
  39. Kaur, M., **Singh, H.** and Prakash, S., (2006), "Use of WC-Co and Cr<sub>3</sub>C<sub>2</sub>-NiCr HVOF Spray Coatings to enhance Erosion-Corrosion Resistance of Boiler Steels", Proc. International Conference on 'Advances in Mechanical Engineering (AME2006)', December 1-3, held at BBSB Engg. College, Fatehgarh Sahib, INDIA, pp.288-294.
  40. Prakash, S., Puri, D. and **Singh, H.**, (2005), "Cyclic Oxidation Behaviour of Plasma Sprayed Stellite-6 Coated Ni-Base Superalloys in Air and in Na<sub>2</sub>SO<sub>4</sub> -60%V<sub>2</sub>O<sub>5</sub> Environment", Proc. 'Materials Degradation: Innovation, Inspection, Control and Rehabilitation Symposium, COM 2005,' August 21-24, held at Calgary, Alberta, CANADA, pp 415-434.
  41. **Singh, H.**, Puri, D. and Prakash, S., (2004), "An Overview of High Temperature Oxidation of Metals and Alloys," Indo-Japan Conf. on 'Damage Tolerant Design and Materials,' Dec., 16-18, held at IITM, Chennai, INDIA Pub. Assoc. Machines and Mechanisms, INDIA, pp.157-162.
  42. Prakash, S., Sidhu, T.S. and **Singh, H.**, (2004), "Hot Corrosion Induced by Na<sub>2</sub>SO<sub>4</sub> and/or V<sub>2</sub>O<sub>5</sub> Salt Environments", presented in TransMat Expo 2004-An International Conference and Exhibition on 'Advances in Materials and Processes for Transportation Sector,' held on November 08-10, at Mumbai, INDIA.
  43. **Singh, H.**, Puri, D. and Prakash, S., (2004), "High Temperature Oxidation Behaviour of Plasma Sprayed NiCrAlY Coatings on Ni-Based Superalloys in Air", presented in International Symposium of Research Scholars on 'Mater. Sci. & Eng.,' Dec., 20-22, held at IITM, Chennai, INDIA.

#### • National Conferences-24

1. Bala, N., **Singh, H.** and Prakash, S., (2011), "Comparative Performance of Cold Sprayed Ni-20Cr and Ni-50Cr Coatings on T22 Boiler Steel in Different Aggressive Environments", Proc. 'National Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME'11)', October 7-8, held at Punjab Technical University Jalandhar, Punjab, India.
2. Kaur, M., **Singh, H.**, and Prakash, S., (2011), "Studies on Role of Detonation-gun Sprayed WC-Co Coatings to Combat High Temperature Corrosion of Boiler Steel", Proc. 'National Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME'11)', October 7-8, held at Punjab Technical University Jalandhar, Punjab, India.
3. Kumar, H., Goyal, D.K. and **Singh, H.**, (2011), "Slurry Erosion Performance of Uncoated and HVOF Sprayed Diamalloy 4700 (CoNiCrAlY) Coated CA6NM Steel", Proc. 'First National Conference on Advances in Mechanical Engineering (NCAME-2011)', May 20-21, held at UIET, Panjab University, Chandigarh, India.
4. Grewal, H.S., Agrawal, A. and **Singh, H.**, (2011), "CFD Modeling for Evaluation of Slurry Erosion of Hydroturbine Materials", Proc. 'Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME 2011)', October 7-8, held at Punjab Technical University, Jalandhar, Punjab, India.

5. Grewal, H.S., Bhandari, S. and **Singh, H.**, (2010), "Slurry Erosion Performance of Hydroturbine Steel and Thermal Spray Coating", Proc. 'National Conference on Futuristic Trends in Mechanical Engineering (FTME 2010)', October 29-30, held at GNDEC, Ludhiana, Punjab, India.
6. Kaushal, G., **Singh, H.** and Prakash, S. (2008), "Introduction to Detonation Gun Thermal Spray Coating Technique and its Prospective Use to Enhance Life of Boiler Steels", Proc. National Conference on 'Recent Advances in Mechanical & Production Engineering (LDMPE-08)', June 13-14, RIMT-IET, Mandi Gobindgarh, India.
7. Singh, S., Agnihotri, S. and **Singh, H.**, (2008), "Comparative Study of Two Dimensional and Three Dimensional Stress Analysis Techniques over Ansys10", National Conference on 'Trends in Mechanical Engineering (TIME-2008)', February 08-09, held at Chandigarh Engineering College, Landran, Mohali, INDIA, pp.21-25.
8. Singh, S. and **Singh, H.**, (2008), "An Alternative Method for Selection of Equivalent Load for Design of Shafts", National Conference on 'Trends in Mechanical Engineering (TIME-2008)', February 08-09, held at Chandigarh Engineering College, Landran, Mohali, INDIA, pp.26-29.
9. Singh, S., Kaur, M. and **Singh, H.**, (2008), "A Review of Lean Manufacturing: A Feasible Solution to Industrial Objectives", National Conference on 'Trends in Mechanical Engineering (TIME-2008)', February 08-09, held at Chandigarh Engineering College, Landran, Mohali, INDIA, pp.249-253.
10. Singh, S. and **Singh, H.**, (2008), "Finite Element Analysis and Shape Optimization of Rectangular Plate with Circular Hole", Presented in '11<sup>th</sup> Punjab Science Congress', February 7-9, held at Thapar University, Patiala, INDIA, Abstract No. D-31, pp. 51.
11. Bala, N., **Singh, H.** and Prakash, S., (2007), "Hot Corrosion: its Mechanisms and Prevention", Proc. National Conference on 'Futuristic Trends in Mechanical Engineering (NCFTME-2007)', September 13-14, held at Shaheed Udham Singh College of Engineering and Technology, Tangori, Mohali, INDIA, pp. 18-24.
12. Singh, S. and **Singh, H.**, (2007), "Maintaining Air Circulation with the use of Solar Energy", Proc. National Conference on 'Futuristic Trends in Mechanical Engineering (NCFTME-2007)', September 13-14, held at Shaheed Udham Singh College of Engineering and Technology, Tangori, Mohali, INDIA, pp. 157-159.
13. Ratol, J. S. and **Singh, H.**, (2007), "Improvement in Properties by Post Treatment of Thermally Sprayed Coatings with Laser Re-melting", Proc. National Conference on 'Futuristic Trends in Mechanical Engineering (NCFTME-2007)', September 13-14, held at Shaheed Udham Singh College of Engineering and Technology, Tangori, Mohali, INDIA, pp. 166-174.
14. Gill, S. S., Singh, R. and **Singh, H.**, (2007), "Sub-Zero Treatment of Steels", Proc. National Conference on 'Futuristic Trends in Mechanical Engineering (NCFTME-2007)', September 13-14, held at Shaheed Udham Singh College of Engineering and Technology, Tangori, Mohali, INDIA, pp. 242-250.
15. Bera, A. and **Singh, H.**, (2007), "Economy of Biomass Co-combustion Using Fluidized Bed Boilers", presented in 'X Punjab Science Congress', Punjab Academy of Sciences, Feb.7-9, held at DAV Institute of Engineering and Technology, Jalandhar, INDIA.
16. Singh, S. and **Singh, H.**, (2007), "Design of a Variable Flange Coupling for Shafts of Different Diameters", Proc. National Conference on 'Emerging Trends in Mechanical Engineering (ETME)' June 4-5, 2007 held at Sardar Vallabhbhai National Institute of Technology, Surat, Gujrat, INDIA, paper DE27.
17. **Singh, H.**, Hira, D.S., Prakash, S. and Sidhu, T.S., (2006), "Hot Corrosion Performance of Plasma Sprayed Ni-20Cr Coatings", Proc. National Conference on 'Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME'06)' October 13-14, 2006 held at GZS College of Engineering and Technology Bathinda, INDIA, pp. 311-321.
18. Sidhu, T. S., **Singh, H.**, Prakash, S. and Agrawal, R.D., (2006), "Oxidation and Hot Corrosion behaviour of Ni-based Superalloy", Proc. National Conference on 'Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME'06)' October 13-14, 2006 held at GZS College of Engineering and Technology Bathinda, INDIA, pp.285-293.
19. **Singh, H.**, Puri, D. and Prakash, S., (2006), "Investigations on the Role of Plasma Sprayed Ni<sub>3</sub>Al Coatings in developing Hot Corrosion Resistance", '9<sup>th</sup> Punjab Science Congress', February 7-9, held at Guru Nanak Dev Dental College and Research Institute, Sunam, INDIA.
20. Bala, N., **Singh, H.** and Prakash, S., (2005), "An Overview on Advanced Thermal Spray Coating Processes", presented at National Conference on 'Energy, Environment, Ecosystem and Sustainable Development (EEESD-2005)', August 4-5, held at BBSB Engg. College, Fatehgarh Sahib, INDIA.
21. Kaur, M., **Singh, H.** and Prakash, S., (2005), "Role of Thermal Spray Technologies in Surface Engineering", presented at National Conference on 'Energy, Environment, Ecosystem and

Sustainable Development (EEESD-2005),’ August 4-5, held at BBSB Engg. College, Fatehgarh Sahib, INDIA.

22. **Singh, H.**, Puri, D. and Prakash, S., (2004), “Hot Corrosion of Some Superalloys and Role of Plasma Spray Coatings- A Review”, ‘7<sup>th</sup> Punjab Science Congress’, February 7-9, held at GNDU, Amritsar, INDIA.
23. **Singh, H.**, Singh, B. and Prakash, S., (2003), “Characterisation of Plasma Sprayed Fly Ash Coatings”, presented in ‘XIII National Conference of Indian Society of Mechanical Engineers (ISME-2003)’, held at Indian Institute of Technology Roorkee, Roorkee. INDIA.
24. **Singh, H.** and Hira, D. S., (2001), “Simulation Study of A Steel Re-Rolling Mill”, presented in ‘Fourth Punjab Science Congress’, Punjab Academy of Sciences, February 9-10, held at PAU, Ludhiana, INDIA.

- **General Papers-03**

1. Kaur, G. and **Singh, H.**, (2002), “Integrating Human Values in Technical Education”, presented in Annual Convention & National Seminar on ‘Integrating Human Values in Technical Education,’ April 26, held at BBSB Engg. College, Fatehgarh Sahib, INDIA.
2. **Singh, H.** and Kaur, G., (2000), “Teacher-Student Relationship”, presented in National Seminar on ‘Role and Place of Teacher in the Age of IT & Humanism,’ Sept.5, held at SLIET, Longowal, INDIA.
3. Kaur, G. and **Singh, H.**, (2000), “Teacher and Information Technology”, presented in National Seminar on ‘Role and Place of Teacher in the Age of IT & Humanism,’ Sept.5, held at SLIET, Longowal, INDIA.

**ANNEXURE A**  
**Guidance of Ph.D. and M.Tech. Theses**

**Ph.D. Completed-4**

1. **Ms Niraj Bala:** "Investigations on Hot Corrosion Behaviour of Cold Spray and HVOF Spray Coatings on T22 and SA516 Steels" Punjab Technical University, Jalandhar, India in the year 2010.
2. **Ms Manpreet Kaur:** "Studies on Role of High-Velocity Oxy-Fuel Spray coatings to enhance Erosion Corrosion Resistance of Boiler Steels" Punjab Technical University, Jalandhar, India in the year of 2011.
3. **Mr Simranpreet Singh Gill:** "Investigations on Characterisation and Machining Performance of Cryotreated Single Point Cutting Tools Punjab Technical University, Jalandhar, India in the year 2011.
4. **Mr Gagandeep Kaushal:** "Erosion Corrosion Studies on High-Velocity Oxy-Fuel Thermal Spray Coating over Some Boiler Steels" Punjab Technical University, Jalandhar, India in the year of 2011.

**Ph.D. Guidance-7 (On-going)**

1. **Mr Sanjeev Bhandari:** "Slurry Erosion Behaviour of Detonation Gun Sprayed Coatings on Some Hydraulic Turbine Materials" registered with Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, India in the year 2008.
2. **Mr Deepak Goyal:** "Investigations on Role of High-Velocity Oxy-Fuel Spray Coatings to control Slurry Erosion of Hydraulic Turbine Materials" registered with Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, India in the year 2008.
3. **Harpreet Singh Arora**
4. **Mr Ravinder Singh Joshi**
5. **Mr Manoj Kumar**
6. **Mr Patel Amit Rajnikant**
7. **Mr TP Singh**

**M. Tech. Guidance-8**

1. **Mr Harpreet Singh Sekhon;** M.Tech. (CAD/CAM) Thesis entitled "Studies on the Role of  $\text{Al}_2\text{O}_3/\text{TiO}_2$  and  $\text{Cr}_2\text{O}_3$  Coatings to Reduce Wear of SS 309 Steel" with Punjab Technical University, Jalandhar, India in the year 2007.
2. **Mr Amit Handa;** M. Tech. (Machine Design) Thesis entitled "Effect of Axial Pressure and Rotational Speed on the Mechanical Properties of the Friction Welded Mild Steel Bars" with Punjab Technical University, Jalandhar, India in the year 2007.
3. **Mr Amit Kohli;** M.Tech. (CAD/CAM) Thesis entitled "Studies on the Role of Cold Spray Ni-20Cr and Ni-50Cr Coatings to reduce Wear of T-22 and SA-516 Steels" with Punjab Technical University, Jalandhar, India.
4. **Ms Maninder Kaur;** M. Tech. (Machine Design) Thesis entitled "Sliding Wear Performance of Plasma Sprayed Ni-20Cr and  $\text{Ni}_3\text{Al}$  Coatings despoiled on AISI 309SS Steel" with Punjab Technical University, Jalandhar, India.
5. **Mr Bhalinder Singh;** M. E. (Mechanical Engineering) Thesis entitled "Role of Detonation Spray Coating to reduce Erosion-Corrosion of Some Boiler Steels" with Punjab Engineering College, Chandigarh, India.
6. **Ms. Shakunpreet Kaur;** M. Tech. (Machine Design) Thesis entitled "Role of WC-Co Blending in Enhancing Wear Resistance of HVOF-sprayed  $\text{Cr}_3\text{C}_2$ -25NiCr Coatings on Some Boiler Steels" with Punjab Technical University, Jalandhar, India.
7. **Mr Sukhjot Singh;** M. Tech. (Machine Design) Thesis entitled "EDM Machining of Some Steels" with Punjab Technical University, Jalandhar, India.
8. **Mr. Harpreet Singh;** M. Tech. (Machine Design) Thesis entitled "Wear Performance of Cold Spray Coatings" with Punjab Technical University, Jalandhar, India.

## **ANNEXURE B**

### **Short-Term Courses/Workshops Attended**

1. Short Term Course on '**Basic Concepts in Cryogenic Technology**' organized by Department of Mechanical and Production Engineering, Guru Nanak Dev Engineering College, Ludhiana from October 17 to 18, 1996.
2. Short Term Course on '**Productivity Enhancement Thorough Resource Waste Reduction**' organized by Department of Mechanical and Industrial Engineering, Thapar Institute of Engineering and Technology, Patiala, India from December 18 to 29, 2000.
3. Short Term Course on '**A Workshop on System Modeling and Simulation**' organized by Department of Mechanical Engineering, Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, India from July 31 to August 11, 2000.
4. Short Term Course on '**Industrial Safety and Hazards Management**' organized by Department of Chemical Engineering, University of Roorkee, Roorkee, India from June 13 to 27, 2001.
5. Short Term Course on '**Corrosion and Its Protection**' organized by Department of Metallurgical and Materials Engineering, Indian Institute of Technology Roorkee, Roorkee, India from June 28 to July 2, 2004.
6. Short Term Course on '**Advances in Renewable Energy Technologies**' organized by Department of Mechanical and Industrial Engineering, Indian Institute of Technology Roorkee, Roorkee, India from July 19 to 23, 2004.
7. Short Term Course on '**Nano Technology-Nano Materials and Their Applications**' organized by Department of Metallurgical and Materials Engineering, Indian Institute of Technology Roorkee, Roorkee, India from February 21 to 25, 2005.
8. A workshop on '**Thermal Spray (WTS 2007)**' organized by Metallizing Equipment Co Pvt. Ltd, Jodhpur, India from February 22 to 23, 2007.

### **ANNEXURE C**

#### **International/National Conferences Attended**

	<b>Name of the Conference</b>	<b>Duration</b>	<b>Organiser(s)</b>	<b>Country</b>
<b>International</b>	International Thermal Spray Conference and Exposition (ITSC-2011)	September 27-29, 2011	DVS, ASM-TSS	Germany
	International Conference on Materials and Materials Processing (ICAMMP 2011)	December 9-11, 2011	IIT Kharagpur	India
	The 49 <sup>th</sup> Annual International Conference of Metallurgist (COM 2010)	October 3-6, 2010	Met Soc, Canada	Canada
	Cold Spray Conference 2010	September 27-28, 2010	TSS, ASM, USA	USA
	The 47 <sup>th</sup> Annual International Conference of Metallurgist (COM 2008)	August 24-27, 2008	Met Soc, Canada	Canada
	International Thermal Spray Conference and Exposition (ITSC-2008)	May 29-June 15, 2008	DVS, ASM-TSS, IIW	Netherlands
	The Sixth Pacific Rim International Conference on Advanced Materials and Processing	November 5-9, 2007	TMS, USA, CSM, China, JIM, Japan & KIM, Korea	South Korea
	MS&T'06 Material Science and Technology 2006 Conference and Exposition	October 15-19, 2006	ASM, TMS, ACerS, AIST, USA	USA
	Advances in Mechanical Engineering-2006 <b>(Organized as Chairman)</b>	December 1-3, 2006	BBSB Engineering College, TMS, USA, ISTE & IE(I)	India
	International Symposium of Research Scholars on Material Science & Engineering	December 20-22, 2006	IITM, Chennai, IIM, ARCI	India
<b>National</b>	9 <sup>th</sup> Punjab Science Congress	February 7-9, 2006	Punjab Academy of Sciences	India
	Energy, Environment, Ecosystem and Sustainable Development (EEESD-2005)	August 4-5, 2005	BBSB Engineering College	India
	7 <sup>th</sup> Punjab Science Congress	February 7-9, 2004	Punjab Academy of Sciences	India
	XIII National Conference of Indian Society of Mechanical Engineers (ISME-2003)	December 29-31, 2003	ISME & IITR, Roorkee	India
	4 <sup>th</sup> Punjab Science Congress	February 7-9, 2001	Punjab Academy of Sciences	India
	Annual Convention & National Seminar on Integrating Human Values in Technical Education	April 26, 2002	BBSB Engineering College	India
	National Seminar on Role and Place of Teacher in the Age of IT & Humanism	September 5, 2000	SLIET, Longowal	India