

## **CURRICULUM-VITAE**

**Prof. (Dr.) Buta Singh Sidhu**  
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 Marital Status: Married  
**Date of Birth:** 10<sup>th</sup> October 1964



### **Field of Specialization**

Surface Engg, Hot Corrosion and Protection of Materials, Degradation of Materials, Erosion and Wear, Biomedical Coatings, Friction-Stir Processing and Welding, Production Engg, Thermal Engg

**Ph. D. Thesis Topic** : Studies on the Role of Coatings in Improving Resistance to Hot Corrosion and Degradation.

### **Academic Qualifications**

<i>Degree</i>	<i>Institute</i>	<i>University</i>	<i>Year</i>
Ph. D.	Indian Institute of Technology, Roorkee	Indian Institute of Technology, Roorkee	2003
M. E. (Mech. Engg.)	Guru Nanak Dev Engineering College Ludhiana	Panjab University Chandigarh	1994
B. E. (Mech. Engg)	Guru Nanak Dev Engineering College Ludhiana	Panjab University Chandigarh	1990

### **Teaching and Research Experience**

*(Experience as Professor and above from December 24, 2008 onward i.e. more than 10 years)*

<b>Organization</b>	<b>Designation</b>	<b>From</b>	<b>To</b>
MRS PTU, Bathinda (Pb.) India	Vice Chancellor	02.11.2020	01.11.2023
SBS State University Ferozpur	Vice Chancellor (Addl. Charge)	26.04.2021	01.11.2023
MRS Punjab Technical University (MRS PTU), Bathinda (Pb.) India	Professor and Dean	02.11.2023	31.10.2024
	Registrar	15.07.2020	07.12.2020
	Dean Planning and Development	28.10.2016	02.07.2021
	Director DEP (Addl. Charge)	08.11.2016	04.08.2020
IKG Punjab Technical University, Jalandhar (Pb.) India	Dean Academics (additional charge Dean, DEP)	16.03.2010	27.10.2016
Yadavindra College of Engineering (YCoE), Punjabi University Guru Kashi Campus, Talwandi Sabo, Bathinda (Pb.) India	Professor and Head	19.03.2009	15.03.2010
Guru Nanak Dev Engineering College, Ludhiana (Pb.) India	Professor	24.12.2008	18.03.2009
<b>Research Scholar from 21.07.2000 to 17.07.2003 at Indian Institute of Technology (IIT) Roorkee (UK) under QIP scheme of AICTE New Delhi.</b>			
GZS College of Engineering & Technology Bathinda	Assistant Professor/ Associate Professor	22.06.2002	23.12.2008
	Lecturer (Sr. Scale)	22.06.1998	21.06.2002
	Lecturer	03.01.1992	21.06.1998

## Administrative Experience

1. Vice Chancellor, MRS Punjab Technical University, Bathinda, from 2<sup>nd</sup> November 2020 to 1<sup>st</sup> November 2023.  
**(Major achievements as Vice Chancellor attached as Annexure-A)**
2. Vice Chancellor, SBS State University Ferozpur, from 26<sup>th</sup> April 2021 to 1<sup>st</sup> November 2023.
3. Registrar, MRS Punjab Technical University, Bathinda, from 15<sup>th</sup> July 2020 to 7<sup>th</sup> December 2020.
4. Dean (P&D), MRS Punjab Technical University, Bathinda, from 28<sup>th</sup> October 2016 to 2<sup>nd</sup> July 2021.
5. Director (Distance Education), Additional Charge, MRS Punjab Technical University, Bathinda, from 28<sup>th</sup> October 2016 to 4<sup>th</sup> August 2020.
6. Dean (Academic), IKG Punjab Technical University, Jalandhar, since 16<sup>th</sup> March 2010 to 27<sup>th</sup> October 2016.
7. Dean (Distance Education), Additional Charge, IKG Punjab Technical University, Jalandhar since 17<sup>th</sup> August 2015 to 27<sup>th</sup> October 2016.
8. Founder Director, Punjab Institute of Technology (PIT), Kapurthala, a constituent college of PTU from 15.04.2011 to 12.07.2012 and 03.05.2103 to 10.06.3013.
9. Founder Director, Punjab Institute of Technology (PIT), Mansa, a constituent college of PTU from 13.04.2011 to 30.06.2015.
10. Director, Punjab Institute of Technology (PIT), Rajpura, a constituent college of PTU from 29.02.2012 to 15.09.2012.
11. Principal, GZS CCET Bathinda from 12.08.2011 to 10.09.2011.
12. Professor and Head Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Campus of Punjabi University Patiala from March 2009 to March 2010.
13. Chairman Staff Medical Aid Committee, Guru Nanak Dev Engineering College Ludhiana from January 2009 March 2009
14. NCC Officer and established NCC unit at GZS CET Bathinda. NCC Officer since its inception i.e. from 1996 to December 2008.
15. President Sport, Giani Zail Singh Campus College of Engineering and Technology, Bathinda from August 2007 to February 2008
16. Hostel Warden, GZS CET Bathinda from August 2003 to September 2007.
17. Security Officer to look after college security wing, GZS CET Bathinda from October 2003 to March 2004.
18. Transport Officer to look after Institute transport, GZS CET Bathinda from July 1992 to August 1999.

## Nominations on High Power Committees

1. Member BOG, MRS PTU Bathinda from 02.11.2020 to 01.11.2023.
2. Secretary BOG, MRS PTU Bathinda from 17.07.2020 to 07.12.2020.
3. Member BOG, SBS SU Ferozpur from 26.04.2021 to 01.11.2023.
4. Member BOG, SBS STC, Ferozpur 2012 to 2020.
5. Member BOG, SLIET Longowal (Sangrur) from 02.11.2020 to 01.11.2023.
6. Member BOG, Guru Kashi University Talwandi Sabo (Bathinda) from 26.12.2011 to till date.
7. Member 5<sup>th</sup> BOG, IKG PTU Jalandhar from 2011 to 2015.
8. Member BOG, all the affiliated college of IKG PTU being Dean Academic 210 to 2016.
9. Member Management Committee (as nominee of AICTE New Delhi), Mehar Chand Polytechnic Jalandhar 2013 to 2016.
10. Chief Coordinator centralized admission committee from 2010 to 2016.
11. **Nominated as member to TSS Thermal Spray Advisory Council of TSS-ASM Thermal Spray Society, an affiliate Society of ASM International, USA from 2013 to till date.**
12. Chairman Academic Council MRS PTU Bathinda from 02.11.2020 to till date.
13. Member Academic Council MRS PTU Bathinda from 28.10.2016 to 02.11.2020.
14. Chairman Academic Council, SBS SU Ferozpur from 26.04.2021 to till date.
15. Member Academic Council, Guru Kashi University Talwandi Sabo (Bathinda) from 26.12.2011 to till date.
16. Member Academic Council IKG PTU Jalandhar 16.03.2010 to 27.10.2016.
17. Member Academic Council Beant CET Gurdaspur from 2013 to 2016.
18. Member Academic Council GNDEC Ludhiana from 2013 to 2016.

19. Member Academic Council ACET Amritsar from 2013 to 2016.
20. Chairman Finance Committee MRS PTU Bathinda from 02.11.2020 to till date.
21. Chairman Finance Committee SBS SU Ferozepur from 26.04.2021 to till date.
22. Member HR Committee IKG PTU, Jalandhar.
23. Member Investment Committee IKG PTU, Jalandhar.
24. Overall Chairman to all BOS at IKG PTU being Dean Academic from 16.03.2010 to 27.10.2016.
25. Member Board of Studies, Mechanical Engineering, MRS PTU Bathinda 01.04.2020 to 31.03.2022.
26. **Member Inspection Committee constituted by UGC New Delhi for awarding Autonomous Status to Guru Nanak Dev Engineering College Ludhiana and Beant College of Engineering and Technology Gurdaspur.**
27. **Member Inspection Committee constituted by Government of Punjab to establish Adesh University Bhucho Kalan (Bathinda); Akal University Talwandi Sabo (Bathinda); Chandigarh University Garuana (Mohali); Chitkara University Rajpura; GNA University Phagwara (Kapurthala) and Sant Baba Bhag Singh University Khiala (Padhiana) Jalandhar.**
28. Chairman, AICTE New Delhi Committee for Campus Accommodation & Facilities Enhancing Social Experience (CAFES), 2021.
29. Member Programme Advisory Committee (PAC) of DST for MOBILITY FELLOWSHIP (Addressing Relocation Issue of Women Scientists/Academicians) under KIRAN (Knowledge Involvement in Research advancement through Nurturing) for two years from 2016 to 2018.
30. Member Subject Expert Committee (SEC) for Engg. and Tech. of DST New Delhi for proposals evaluation under Women Scientist Scheme (WOS-A) for three years from May 2016 to May 2019.
31. Member NAAC Discipline Committee to prepare and recommend the detailed methodology for accreditation by gathering inputs on various thematic areas.

#### **Visiting Professor/ Resource Person**

1. SBS State Technical Campus Ferozpur (Pb.)
2. Punjabi University Patiala (Pb.)
3. PEC University Chandigarh
4. NIT Jalandhar
5. **University of Windsor, Windsor Canada**
6. **Wayne State University, Detroit, USA**
7. Chandigarh University Gharuan (Mohali)
8. Guru Kashi University Talwandi Sabo, Bathinda
9. Sardar Beant Singh (SBS) State University, Gurdaspur (Pb.)
10. Baddi University of Emerging Sciences and Technology, Makhnumajra, Baddi, (Solan) HP
11. SRM University, Sonapat (Haryana)

**Ph.D. Thesis Guidance:** 15 and Supervising 01 (Annexure-B)

#### **Research Publications (Annexure-C)**

- Books/Monograph :02 and one book chapter
- International referred journals :86
- Indian referred journals :31
- International Conferences :52
- National conferences :27

**Journal Established** Institutionalized International Journal entitled, “International Journal of Surface Engineering and Materials Technology (IJSEMT),” as **Chief Editor**. (ISSN: 2249-7250)

#### **Books /Journal Reviewed**

Referee to review the research publications of number of international journals namely: **Material Science and Engineering-A, Surface and Coatings Technology, Journal of Materials Processing Technology, Journal of Thermal Spray Technology, Wear, Journal of Materials Engineering and Performance** etc.

**Sponsored Research Projects:**

S. No.	Title	Sponsored by	Amount	Status	Period/ Duration	Remarks
1	Ph. D. Research for three years	All India council of Technical Education (AICTE) New Delhi under Quality Improvement Scheme	NA	Completed	21 <sup>st</sup> July 2000 to 17 <sup>th</sup> July 2003	16 research papers published in international Journals
2	Modernization of Materials and Metallurgical Laboratory	AICTE, New Delhi under its MODROBS Scheme	Rs. 15.00 Lakh	Completed	2003 to 2006	Up gradation of Materials testing laboratory
3	Study of Plasma Sprayed Coatings with Nano-structured Materials	AICTE, New Delhi under its Nationally Coordinator Project (NCP) Scheme	Rs. 17.00 Lakh	Completed	Jan. 2007 to Jan. 2010	Four Patents filed under this research project
4.	Technological Innovations to Improve Degradation Resistance of Pulverized Coal Burner Nozzle (PCBN)	Department of Science and Technology (DST), New Delhi under IRHPA Scheme	Rs. 24.127 Lakh	Completed	2009 to 2011	Completed and PAC awarded good grade
5.	Prototype Development and Innovation Fund	Fund developed by IKG PTU and transferred to IIT Ropar to Promote Innovation in Punjab	Rs. 200.00 Lakh	In process	2012 onward	Innovation projects to be sanctioned by IIT Ropar on behalf of IKG PTU

**Foreign Visits :20 (Annexure-D)****Subjects Taught**

- Materials Technology
- Non Destructive Testing
- Applied Thermodynamics
- Production Engineering
- Manufacturing Practices
- Engineering Graphics
- Surface Engineering
- Refrigeration and Air Conditioning
- Power Plant Engineering
- Automobile Engineering
- Elements of Mechanical Engineering

**Expert Talks/Lectures Delivered : 78 (Annexure-E)****Awards/Fellowships**

1. Merit-cum-Means Scholarship from 1986 to 1990.
2. Awarded Two College Colors.
3. All India Council of Technical Education India Research Fellowship for Ph. D. under Quality Improvement Programme.
4. Best paper award was given to the research paper presented in 13<sup>th</sup> National Conf. of ISME-2003 held at IIT, Roorkee 30-31<sup>st</sup> December, 2003.

5. **Leading Engineer of the World, awarded by International Biographical Centre, Cambridge, England (UK) in the year 2006.**
6. **Best Engineering College Teacher Award, Awarded by ISTE New Delhi in year 2006.**
7. **Awarded with ISTE Honorary Fellowship for the year 2016** on account of distinguished contribution in the area of Technical Education and highly commendable services rendered for the growth of Technical Education System in the Country.
8. **Granted with Fellow Institution of Engineers (FIE), India (F-1263656)**

#### **Conferences/Workshops organized (24)**

1. Organized National Level conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'06)," as Organizing Seceretary on October 13-14, 2006 in the department of Mechanical Engineering GZS College of Engineering and Technology, Bathinda.
2. Organized one day Workshop, "How to be Successful," 19<sup>th</sup> October 2009, at Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab, India.
3. Organized one day workshop, "Patent Awareness," 11<sup>th</sup> December, 2009, in collaboration with Punjab State Council for Science and Technology (PSCST), Chandigarh, at Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab, India.
4. Organized National Level conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'10)," as Convener on February 19-20, 2010 at Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda).
5. Organized National Level conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'11)," as Convener on October 7-8, 2011 at Punjab Technical University Jalandhar-Kapurthala Highway, Kapurthala.
6. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'12)," as Convener on October 5-7, 2012 at Punjab Technical University Jalandhar-Kapurthala Highway, Kapurthala.
7. Organized four days Webinar cum Training workshop in collaboration with NBA, "Outcome Based Accreditation," as Convener on July 25-28, 2013 at IKG Punjab Technical University, Kapurthala (Punjab).
8. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'13)," as Convener on October 3-6, 2013 at Punjab Technical University Jalandhar-Kapurthala Highway, Kapurthala.
9. Organized 3<sup>rd</sup> International conference entitled, "Human Values in Higher Education," 28 February to 2<sup>nd</sup> March 2014 at PTU Jalandhar (Pb.).
10. Organized one day Thermal Spray Workshop at PTU Jalandhar (Pb.) on 15.10.2014.
11. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'14)," as Convener on October 16-18, 2014 at Punjab Technical University Jalandhar-Kapurthala Highway, Kapurthala.
12. Organized one day workshop, "Thermal Spray Technology," organized by Society of Materials and Mechanical Engineers (SOMME) at Guru Nanak Dev Thermal Power Plant Bathinda (Pb.) on 24.02.2016.
13. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'16)," as Patron on February 25-27, 2016 at Baba Farid College of Engineering and Technology, Bathinda (Pb.).
14. Organized one day workshop, "Corrosive Failure Remedies for High Temperature Component," organized by Society of Materials and Mechanical Engineers (SOMME) at CII Chandigarh (Pb.) on 29.06.2016.
15. Organized one day awareness workshop Sponsored by NBA, "Outcome Based Education and Accreditation for Engineering Colleges Affiliated to IKG PTU Jalandhar and MRS PTU Bathinda," at NITTR, Chandigarh on 21.01.2017.
16. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'17)," as Patron on November 2-4, 2017 at Shahid Udham Singh College of Engineering and Technology (SUS CET), Tangori, Mohali-(Pb.).

17. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'18),” as Chairman on November 15-17, 2018 at Panjab University SSG Regional Centre (PUSSGRC), Hoshiarpuri-(Pb.).
18. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'19),” as Chairman on December 5-7, 2019 at IIT Ropar (Pb.).
19. Organized one day online workshop entitled, “Online Teaching and Effective Learning: Bridging the Gap,” as Program Advisor on May 23, 2020 by SOMME at Bathinda (Pb.).
20. Organized AICTE and ISTE approved one week online Faculty Development Program entitled, “Enhancing Research Capabilities,” as Program Advisor on June 1-5, 2020 by SOMME at Bathinda (Pb.). *(The first program of its kind organized online in COVID'19 days with the approval from approving bodies)*
21. Organized AICTE and ISTE approved one week online Faculty Development Program entitled, “Coatings and Surface Engineering: Addressing the Need of Industry,” as Program Advisor on June 10-16, 2020 by SOMME at Bathinda (Pb.).
22. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'20),” as Chairman on December 19-20, 2020 through online mode at MRS PTU Bathinda (Pb.).
23. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'21),” as Chairman on December 9-11, 2021 at IIT Ropar (Pb.).
24. Organized International conference entitled, Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME'23),” as Chairman on October 26-28, 2023 at MRSPTU Bathinda (Pb.).

**Conferences/Workshops attended : 61 (Annexure-F)**

**Short Terms Schools/Courses attended : 15 (Annexure-G)**

**Membership of Professional Organizations (06)**

1. Life member of Indian Society for Technical Education (ISTE) (LM-15413) and Elected as Executive Council Member for the period 2015-2020.
2. Elected as Fellow Institution of Engineers (FIE), India (F-1263656) and Chairman Bathinda Local Centre
3. Life member of Punjab Academy of Science (L-382)
4. Elected as member of ASM International, Materials Park, Ohio (USA) from May 2006 to June 2007 (ASM ID 520965)
5. Elected as member of Australian Ceramic Society, Australia from July 2007 to May 2008.
6. Founder Life member of “Society of Materials and Mechanical Engineers” and Elected as President for the period from 2015-2018.

**(Buta Singh Sidhu)**

## **Annexure-A**

### **Significant Achievements**

#### **(MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY BATHINDA)**

##### **Accreditation and Rankings:**

In a short span of 03 years during my tenure (out of which almost one year was passed in the pandemic conditions during Covid-2019), MRSPTU became the leading technical University of Punjab to get:

- NAAC Accreditation in its first cycle itself within six years of establishment.
- Awarded as ‘Best Technical University’ by Indian Society of Technical Education (ISTE) in a nationwide open competition.
- Ranked 4<sup>th</sup> in ARIIA Ranking in the Beginner band and overall 62<sup>nd</sup> in ARIIA Ranking 2021.
- University shined in the first 100 Universities in NIRF ranking as Pharmacy department of University ranked 99<sup>th</sup> in 2023 NIRF Innovation Ranking.
- Become first technical university to get status of Accreditation and Assessment body by National Council of Vocational and Technical Education (NCVTE), Govt. of India.

##### **Research and Entrepreneurship Initiatives:**

Following efforts are being made to develop a comprehensive research and innovation ecosystem at the University:

- Active participation of Entrepreneurship Development Cell -cum- Business Incubation Centre, Institution Innovation Council, Intellectual Property Rights Cell, University Instrumentation Facility, Grant Cell etc.
- Over 10.0 crores research and innovation grants
- 40+ Intellectual Property Rights
- Two Student Startups
- More than 700 publications with increase in citations from 2289 (Till 2020) to 10716 (Till now), making its presence globally felt.
- 379 Publications in last 3 years in comparison to 242 in previous 5 years.
- Started University Research Fellowship-cum-Teaching Associateship scheme without any financial burden.
- BCL-AICTE IDEA Lab has organized 15 Ideation workshops, 4 FDPs, 2 Boot Camps, Internships till date for dissemination of innovation and critical thinking among school and college students and faculty members.

##### **Financial Sustenance:**

MRSPTU, despite receiving only 150 crores against proposed 500 crores from IKGPTU, has sustained itself financially by adopting low-cost administrative approaches like minimum establishment cost, utilization of existing staff for administrative duties, recruitment of highly qualified faculty strictly as per need, in house development of software for admission, examination, affiliation process and ERP, and cutting on other expenses. Various major efforts made for financial sustenance during my tenure and related outcomes are as follows:

- **Liaison with potential college management, resulted raise in no. of affiliated colleges from 47 to 57.**
- **Increase in total income of the University by more than 50% [from 28.63 crores to 43.00 crores]**
- Establishment of Grant Cell to encourage research funding from govt. agencies, resulting in approx. 10.00 crore grants under various research schemes.
- Exclusive innovation grant for establishment of BCL-AICTE IDEA Lab, one of its kind in Punjab with a total grant of 1.11 crores including assistance of 56.0 lacs from BCL Industries Ltd., Bathinda.
- Receipt of 4.5 crore grant for development of indoor sports facilities under Khelo India Scheme.
- Receipt/Sanction of 14 crores as grant in aid from state government. From 2023-24 revenue grant provision in annual budget by Punjab Govt.
- Visit of >20000 school students during various events for sensitization and positive outreach of the University to strengthen admissions.

- Continual improvement in overall admissions at the campus departments by 1.72 times [from 767 (2020-21) to 1325 (2023-24)].
- Significant improvement in overall University admissions by 2.5 times [from 3570 (2020-21) to 8990 (2023-24)].
- Extensive efforts to enhance consultancy revenues, resulting in total consultancy revenue of 10.0 crores generated during my tenure, significantly high from earlier data.
- Branding of university to other states through Press conferences by PR Department

#### **Establishment and Contributions of Corporate Resource Centre:**

An exclusive student support centre for industrial practices and training/placement was started as 'Corporate Resource Centre (CRC). Various initiatives of Corporate Research Centre (CRC) in co-ordination with Training and Placement Cell are as follows:

- Working closely with Industry, Alumni, T&P and students.
- Counselling and career guidance for students from first year onward, grooming in the chosen area of interest.
- Online portal for Alumni (MAA- MRSPTU Alumni Association) was launched and a connect with over 15000 alumni has been established for further explorations.
- Mandatory course in 'Quantitative Aptitude and Communication Skills' is started as Value Added Course for all students in campus to develop their personality and communication skills.
- Mock Interview sessions in generalized and exclusive mode are regularly conducted for betterment of student placement opportunities.
- Placement of students in major industrial leaders like Volvo, Eicher, Reliance, Oswal Woolen Mills, Vardhman Pvt. Ltd., HDFC, ICICI, Wipro, Infosys, Cap Gemini, TCS, Cognizant, Punjab Tractor Ltd. etc.
- Internship support in companies like Nestle, Bonn, Del Monte, Cremica etc.
- For the first time, students have received stipend of INR 50000 per month from industry to carry out their Industrial training.
- Options to complete last semester/year in the industry/government establishments
- First time placements in pre-final year
- Two fold increase in the placement package, maximum package up to 17 Lakhs

#### **MoU/Collaborations:**

In order to achieve academic excellence, MRSPTU has signed MoU with renowned industries/academic institutes/training partners viz. NITTTR, Edu Skill Foundation, DAV College, ICAR-NINFET, CUP Bathinda, AIIMS Bathinda, NIT Uttarakhand, AICTE, Punjab Skill Development Mission, IIT Ropar, NCVET, SOMME, BCL Industries Ltd., Verka, Internshala, GNA Gears, Innovation Mission – Punjab, FUEL etc. Under these collaborations:

- A Grant of 1.0 crore was sanctioned from AICTE for translation of technical books in vernacular language (Punjabi) for nationwide circulation.
- Organised 22 AICTE sponsored Faculty Development Programmes and 02 Development Programmes for non-teaching staff.
- Empanelment with Punjab Skill Development Mission, Govt. of Punjab, to organize Training of Trainers (ToT) Programmes as novel initiatives.
- **Two leading programmes with clinical orientation i.e. Pharm.D. and MBA Hospital Administration are started in collaboration with AIIMS, Bathinda.**
- Student exchange (3+1 and 1+1) with Wayne State University (WSU) Detroit (Michigan) USA.
- Student exchange (2+2) with Thompson Rivers University (TRU), Kamloops, Canada.
- Student and Faculty exchange with UFV, UNBC, SJSU, UWS, Swinburne Univ. of Tech., Waiariki Institute of Tech. etc.
- Joint Research projects and sharing of infrastructure with AIIMS Bathinda and CUP Bathinda.

**Annexure-B**  
**Ph. D. Thesis Guidance**

**Completed (15)**

1. **Dr. Hazoor Singh:** Role of HVOF coatings in improving resistance to surface degradation, Punjab Technical University Jalandhar (Pb.) India in the year 2007 (Regd. No. 05.16.04)
2. **Dr. Vikas Chawla:** Hot Corrosion and Erosion Behavior of Nanostructured and Conventional Coatings, Indian Institute of Technology Roorkee (UK) India in the year 2010 (Enrolment No. 069503).
3. **Dr. Sukhpal Singh Chatha:** Post treatment of Thermal Spray coatings for improving their corrosion resistance at high temperature, Punjabi University Patiala (Pb.) India in the year 2012 (Regd. No. YEC(TS)2005-145).
4. **Dr. Rakesh Bhatia:** Development of erosion-corrosion resistant HVOF sprayed  $\text{Cr}_3\text{C}_2\text{-NiCr}$  coatings for boiler tube steels operating at elevated temperature, Punjabi University Patiala (Pb.) India in the year 2013 (Regd. No. PUP(PH.D.)2010-6).
5. **Dr. Gurpreet Singh:** Fabrication & Characterisation in Vitro of Thermal Sprayed HA/SiO<sub>2</sub>/CaP Coatings for Bio Medical Applications, Punjabi University Patiala (Pb.) India in the year 2014 (Regd. No. PUP(PH.D.)09-287).
6. **Dr. Jasmaninder Singh:** Study of Nano Structured and Conventional TiAlN Coatings on Boiler Stainless Steels with Respect to Erosion and Wear, Punjab Technical University Jalandhar (Pb.) India in the year 2014 (Regd. No. 05.39.08)
7. **Dr. Pardeep Jindal:** Technological Innovations to Improve Material Degradation Resistance of Pulverized Coal Burner Nozzle, Punjabi University Patiala (Pb.) India in the year 2015 (Regd. No. PUP(PH.D.)2010-4).
8. **Dr. Rutash Mittal:** Studies on Dissimilar Metal Weldments Exposed to Elevated Temperature, Punjabi University Patiala (Pb.) India in the year 2015 (Regd. No. PUP(Ph.D.)2010-25).
9. **Dr. Rakesh Goyal:** Study of Hot Corrosion Behaviour of Thermal Sprayed CNT Reinforced Al<sub>2</sub>O<sub>3</sub> Coatings on Boiler Steels, IKG Punjab Technical University Jalandhar (Pb.) India in the year 2018 (Regd. No. 1006013/07/12)
10. **Dr. Manish Goyal:** Investigations on the role of ceramic coatings on boiler steels subjected to high temperature degradation, Punjabi University Patiala (Pb.) India in the year 2018 (Regd. No. 61-GE(B)-93).
11. **Dr. Jagsir Singh:** Surface Modification Techniques to Improve Abrasion Wear Resistance of Tillage Equipments, Punjabi University Patiala (Pb.) India in the year 2018 (Regd. No. YCE (TS) 2006-177).
12. **Dr. Balraj Singh:** In Vitro Degradation Behaviour and Biocompatibility of Plasma Sprayed Bioactive Coatings (HA, Nb, Ta) on Metallic Alloys (CoCr, Mg), Punjabi University Patiala (Pb.) India in the year 2021 (Regd. No. 7141-13-1276).
13. **Dr. Munish Kumar:** Study of the Slurry Erosion behavior of Cryogenically Treated Stainless Steel, Punjabi University Patiala (Pb.) India in the year 2021 (Regd. No. YCE (TS) 2007-347).
14. **Dr. Harkulwinder Singh:** Characterisation and Corrosion Behaviour of Rare Earth Elements Added Chromium Carbide-Nickel Chrome Coatings, Punjabi University Patiala (Pb.) India in the year 2024 (Regd. No. YCE (TS) 2008-298).
15. **Chamkaur Jindal:** Investigation of tribological behavior of friction stir processing on structural steel, IKG Punjab Technical University Jalandhar (Pb.) India in the year 2025 (Regd. No. 1006007).

**Supervising (1)**

- Mr. Jasbir Singh:** Study on High Temperature Corrosion Behaviour of Nano-Structured Coatgins on AISI 3041 Stainless Steel, Punjab Technical University Jalandhar (Pb.) India registered in the year 2015 (Regd. No. 1006007).

## **Annexure-C**

### **Research Publications**

#### ***Books/Monograph (02)***

1. "Plasma Spray Coatings to Combat Materials Degradation" (ISBN 978-3-8465-5825-6), Published by LAP LAMBERT Academic Publishing Co., Heinrich-Böcking-Str.6, 66121 Saarbrücken, Germany.
2. "HVOF Coatings in Improving Resistance to Surface Degradation" (ISBN: 978-3-659-47260-2), Published by LAP Lambert Academic Publishing Co., Heinrich-Böcking-Str.6, 66121 Saarbrücken, Germany.

#### ***Book Chapters (01)***

3. One chapter in the book, "Laser Surface Modifications of Alloys for Corrosion and Erosion Resistance" (ISBN 978-0-85709-015-7), Published by Woodhead Publishing Ltd. 1518 Walnut Street, 1100, Philadelphia, PA-19102, USA.

#### ***International Journals (86)***

4. **Sidhu, B. S.** and Prakash, S., (2003), "Evaluation of the Corrosion Behaviour of Plasma-Sprayed Ni<sub>3</sub>Al Coatings on Steel in Oxidation and Molten Salt Environment at 900 °C," Surface and Coatings Technology, Vol. 166, No. 1, pp. 89-100.
5. **Sidhu, B. S.** and Prakash, S., (2003), "Plasma spray coatings of Ni-20Cr on boiler tube steel and evaluation of its oxidation behaviour at 900°C in air," Journal of Corrosion Science and Engineering, Vol. 6, paper 88.
6. **Sidhu, B. S.**, Puri, D. and Prakash, S., (2004), "Characterisations of Plasma Sprayed and Laser Remelted NiCrAlY Bond Coats and Ni<sub>3</sub>Al coatings on Boiler Tube Steels," Material Science and Engineering A, Vol. 368, No. 1-2, pp. 149-58.
7. **Sidhu, B. S.**, Puri, D. and Prakash, S., (2005), "Mechanical and Metallurgical Properties of Plasma Sprayed and Laser Remelted Ni-20Cr and Stellite-6 Coatings," Journal of Materials Processing Technology, Vol. 159, No. 3, pp. 347-55.
8. **Sidhu, B. S.** and Prakash, S., (2005), "High Temperature Oxidation Behaviour of NiCrAlY Bond Coats and Stellite-6 Plasma Sprayed Coatings," Oxidation of Metals, Vol. 63, No. 3-4, pp. 241-59.
9. **Sidhu, B. S.** and Prakash, S., (2005), "Degradation Behaviour of Ni<sub>3</sub>Al Plasma Sprayed Boiler Tube Steels in Actual Conditions of Energy Generation System," Journal of Materials Engineering and Performance, Vol. 14, No. 3, pp. 356-362.
10. **Sidhu, B. S.** and Prakash, S., (2005), "Effect of Laser Remelting on Hot Corrosion behaviour of Ni<sub>3</sub>Al and Ni-20Cr Plasma Sprayed Coatings," Corrosion, Vol. 61, No. 11, pp. 1098-1106.
11. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2006), "Mechanical and Microstructural Properties of HVOF sprayed WC-Co and Cr<sub>3</sub>C<sub>2</sub>-NiCr coatings on the boiler steels using LPG as fuel gas," Journal of Materials Processing Technology, Vol. 171, pp. 77-82.
12. **Sidhu, B. S.** and Prakash, S., (2006), "Studies on the Behaviour of Stellite-6 as Plasma Sprayed and Laser Remelted Coatings in Molten Salt Environment at 900°C under Cyclic Conditions," Journal of Materials Processing Technology, Vol. 172, pp. 52-63.
13. **Sidhu, B. S.** and Prakash, S., (2006), "Nickel-Chromium Plasma Spray Coatings: A Way to Enhance Degradation Resistance of Boiler Tube Steels in Boiler Environment," Journal of Thermal Spray Technology, Vol. 15, No. 1, pp. 131-140.
14. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2006), "Role of HVOF Coating in Improving Hot Corrosion Resistance of ASTM SA-210 GrA1 Steel in Presence of Na<sub>2</sub>SO<sub>4</sub>-V<sub>2</sub>O<sub>5</sub> salt deposits," Surface and Coatings Technology, Vol. 200, pp. 5386-5394.
15. **Sidhu, B. S.** and Prakash, S., (2006), "Studies on the Behaviour of Ni-20Cr Plasma Spray Coatings Applied on Boiler Tube Steels in Molten Salt (Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub>) Environment at 900°C," Corrosion, Vol. 62, No. 6, pp. 533-540.
16. **Sidhu, B. S.** and Prakash, S., (2006), "Erosion-Corrosion of Plasma as Sprayed and Laser Remelted Stellite-6 Coatings in a Coal Fired Boiler," Wear, Vol. 260, pp. 1035-1044.

17. **Sidhu, B. S.** and S. Prakash, (2006), "Performance of NiCrAlY, Ni-Cr, Stellite-6 and Ni<sub>3</sub>Al coatings in Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub> environment at 900°C under cyclic conditions," *Surface and Coatings Technology*, Vol. 201, No. 3-4, pp. 1643-1654.
18. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2006), "Cyclic hot corrosion of High-Velocity Oxy Fuel Sprayed Coatings on Steel at 900°C," *Corrosion*, Vol. 62, No. 11, pp. 1028-1038.
19. **Sidhu, B. S.** and S. Prakash, (2006), "Evaluation of the Behaviour of Shrouded Plasma Spray Coatings in Platen Superheater of Coal Fired Boilers," *Metallurgical and Materials Transactions A*, Vol. 37, No. 6, pp. 1927-1936.
20. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2006), "Material Characterization-Comparative characteristic and erosion behaviour of NiCr coatings deposited by various HVOF spray processes", *Journal of Materials Engineering and Performance*, Vol. 15, No. 6, pp. 699-704.
21. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2006), "Evaluation of the hot corrosion behavior of LPG assisted HVOF NiCr wire sprayed boiler tube steels in molten salt environments", *Journal ISIJ Int.*, Vol. 46, No. 7, pp. 1067-1074.
22. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2006), "Review on the Part of HVOF Thermal Spray Coating in Protection to Corrosion", *Industrial Practice*, Vol. 7, pp. 383.
23. 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," *Materials and Corrosion*, Vol. 58, No. 2, pp. 92-102.
24. **Sidhu, B. S.**, Singh, H., Puri, D. and Prakash, S., (2007), "Wear and Oxidation Behaviour of Shrouded Plasma Sprayed Fly Ash Coating," *Tribology International*, Vol. 40, No. 5, pp. 800-808.
25. **Sidhu, B. S.** and S. Prakash, (2007), "Analytical Studies on the Behaviour of Nickel- and Cobalt-Based Shrouded Plasma Spray Coatings at Elevated Temperature in Air," *Oxidation of Metals*, Vol. 67, No. 5-6, pp. 279-298.
26. Chawla, V., **Sidhu, B. S.** and Prakash, S. (2007), "State of Art: Applications of Mechanical Alloyed Nanomaterials-A Review," *Journal of Materials and Manufacturing Processes*, Vol. 22, No. 4, pp. 469-473.
27. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2007), "Hot Corrosion Behavior of HVOF Sprayed Coatings on ASTM SA213-T11 Steel", *Journal of Thermal Spray Technology*, Vol. 16, No. 3, pp. 349-354.
28. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2007), "Solid particle erosion of HVOF sprayed NiCr and Stellite-6 coatings", *Surface and Coatings Technology*, Vol. 202, No. 2, pp. 232-238.
29. **Sidhu, B. S.** and Prakash, S., (2008), "Erosion-Corrosion of as Plasma Sprayed and Laser Remelted NiCrAlY Bond Coats in Working Conditions of Coal Fired Boiler," *Corrosion*, Vol. 64, No. 1, pp. 60-69.
30. Chawla, V., **Sidhu, B. S.**, Puri, D. and Prakash, S., (2008), "Performance of plasma sprayed nanostructured and conventional coatings", *Journal of the Australian Ceramic Society*, Vol. 44, No. 2, pp. 56-62.
31. Chawla, V., **Sidhu, B. S.**, Puri, D. and Prakash, S., (2008), "State of Art: Plasma Sprayed Nanostructured Coatings: A Review," *Materials Forum*, Vol. 32, pp. 137-143.
32. Chawla, V., Puri, D., Prakash, S. and **Sidhu, B. S.**, (2009), "Corrosion Behaviour of Nanostructured TiAlN and AlCrN Hard Coatings on Superfer 800H Superalloy in Simulated Marine Environment," *Journal of Minerals and Materials Characterization and Engineering*, Vol. 8, No. 9, pp. 693-700.
33. Chawla, V., Puri, D., Prakash, S. and **Sidhu, B. S.**, (2009), "Characterization and Comparison of Corrosion Behavior of Nanostructured TiAlN and AlCrN Coatings on Superfer 800H (INCOLOY 800 H) Substrate," *Journal of Minerals and Materials Characterization and Engineering*, Vol. 8, No. 9, pp. 715-727.
34. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2010), "Wear characteristics of Cr<sub>3</sub>C<sub>2</sub>-NiCr and WC-Co coatings deposited by LPG fueled HVOF," *Tribology International*, Vol. 43, pp. 887-890.
35. Chawla, V., Chawla, A., **Sidhu, B. S.**, Prakash, S. and Pur, **D.**, (2010), "Oxidation Behavior of Nanostructured TiAlN and AlCrN Thin Coatings on ASTM-SA213-T-22 Boiler Steel," *Journal of Minerals and Materials Characterization and Engineering*, Vol. 9, No. 11, pp. 1037-1057.
36. Chawla, V., Chawla, A., Mehta, Y., Prakash, S., Puri, D. and **Sidhu, B. S.**, (2011), "Investigation of Properties and Corrosion Behavior of Hard TiAlN and AlCrN PVD Thin Coatings in the 3 wt% NaCl Solution," *Journal of the Australian Ceramic Society*, Vol. 47, No. 1, pp. 48-56.

37. Chawla, V., Puri, D., Prakash, S. and **Sidhu, B. S.**, (2011), "Hot Corrosion and Erosion Problems in Coal Based Power Plants in India and Possible Solutions: A Review," *Journal of Minerals and Materials Characterization and Engineering*, Vol. 10, No.4, pp. 367-385.
38. Chawla, V., Chawla, A., **Sidhu, B. S.**, Prakash, S. and Puri, D., (2011), "Performance of Nano-Structured Metal Nitride Coated T-22 Boiler Steel in  $\text{Na}_2\text{SO}_4$ -60%  $\text{V}_2\text{O}_5$  Environment at 900°C under Cyclic Conditions", *Journal of Minerals and Materials Characterization and Engineering*, Vol. 10, No. 7, pp. 583-608.
39. Chawla, V., Puri, D., Prakash, S. and **Sidhu, B. S.**, (2011), "Salt Fog Corrosion Behavior of Nanostructured TiAlN and AlCrN Hard Coatings on ASTM-SA213-T-22 Boiler Steel," *Jordan Journal of Mechanical and Industrial Engineering (JJMIE)*, Vol. 5, No. 3, pp. 247-253.
40. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2012), "Performance of HVOF sprayed NiCr and Stellite-6 coatings under Pin on Disc wear testing," *Material Science Forum*, Vol. 701, pp. 21-29.
41. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "High temperature hot corrosion behaviour of NiCr and Cr<sub>3</sub>C<sub>2</sub>-NiCr coatings on T91 boiler steel in an aggressive environment at 750 °C," *Surface and Coatings Technology*, Vol. 206, No. 19-20, pp. 3839-3859.
42. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "The effects of post-treatment on the hot corrosion behaviour of the HVOF sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr coating," *Surface and Coatings Technology*, Vol. 206, No. 19-20, pp. 4212-4224.
43. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "Characterisation and corrosion-erosion behaviour of carbide based thermal spray coatings", *The Journal of Minerals and Materials Characterization and Engineering*, Vol. 11, No. 6, pp. 569-586.
44. Sidhu, H. S., and **Sidhu, B. S.**, (2013), "Erosion characteristics of HVOF developed Cr<sub>3</sub>C<sub>2</sub>-NiCr and WC-Co coatings," *Material Science Forum*, Vol. 751, pp. 71-79.
45. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2013), "Characterization and Corrosion Resistance of Plasma Sprayed HA and HA-SiO<sub>2</sub> Coatings on Ti-6Al-4V," *Surface and Coatings Technology*, Vol. 228, pp. 242-247.
46. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2013), "High temperature behavior of a NiCr coated T91 boiler steel in the Platen Superheater of Coal-Fired Boiler," *Journal of Thermal Spray Technology*, Vol. 22, No. 5, pp. 838-847.
47. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2013), "The effect of CaP Concentration on Corrosion Behavior of Plasma Sprayed Hydroxyapatite Coating on Titanium in Simulated Body Fluid," *Biomimetics, Biomaterials and Tissue Engineering*, Vol. 18, pp.1-6.
48. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2013), "Corrosion Behavior of Plasma Sprayed Hydroxyapatite and Hydroxyapatite-Silicon Oxide Coatings on AISI 304 for Biomedical Application," *Applied Surface Science*, Vol. 284, pp. 811-818.
49. Mittal, R., and **Sidhu, B. S.**, (2014), "Studies on Microstructural Properties of GTAW Weldment of Ferritic steels," *Materials Forum*, Vol. 38, pp. 158-166
50. Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2014), "Hot Corrosion Studies of HVOF-Sprayed Coating on T-91Boiler Tube Steel at Different Operating Temperatures," *Journal of Materials Engineering and Performance*, Vol. 23, Issue 2, pp. 493-505.
51. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2014), "In-Vitro Corrosion Investigations of Plasma Sprayed Hydroxyapatite and Hydroxyapatite - Calcium Phosphate Coatings on 316L SS", *Bulletin of Materials Science*, Volume 37, Issue 6, pp 1519-1528.
52. Grewal, J. S., **Sidhu, B. S.** and Prakash, S., (2014), "High Temperature erosion performance of nanostructured and conventional TiAlN coatings on AISI-3014 boiler steel substrate," *Transactions of Indian Institute of Metals*, Vol. 67, Issue 6, pp. 889-902.
53. Mittal, R., and **Sidhu, B. S.**, (2015), "Oil-Ash Corrosion Resistance of Dissimilar T22/T91 Welded Joint of Super Heater Tubes," *Journal of Materials Engineering and Performance*, Vol. 24, Issue 2, pp. 670-682.
54. Kumar, P., and **Sidhu, B. S.**, (2015), "Characterization and High Temperature Erosion Behaviour of HVOF Thermal Spray Cermet Coatings," *Journal of Materials Engineering and Performance*, Vol. 25, Issue 1, pp. 250-258.

55. Mittal, R. and **Sidhu, B.S.**, (2015), "Microstructures and Mechanical Properties of Dissimilar T91/347H Steel Weldments," *Journal of Materials Processing Technology*, Vol. 220, pp. 76-86.
56. Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2015), "High Temperature Behavior of Cr<sub>3</sub>C<sub>2</sub>-NiCr Coatings in the Actual Coal-Fired Boiler Environment," *Metallurgical and Materials Transactions-E*, Vol. 2, pp 70-86.
57. Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2015), "Characterization of HVOF Sprayed 90% Cr<sub>3</sub>C<sub>2</sub>-10%NiCr Coating for High Temperature Erosion-Corrosion Resistance," *International Journal of Mechanical Engineering and Materials Science*, Vol. 8, No. 1, pp. 113-121.
58. Grewal, J. S., **Sidhu, B. S.** and Prakash, S., (2016), "Characterization of Nanostructured and Conventional TiAlN Coatings deposited on AISI-304 Boiler Steel," *Advanced Materials Research*, Vol. 1137, pp. 1-14.
59. Grewal, J. S., **Sidhu, B. S.** and Prakash, S., (2016), "Effect of Sliding Velocity on Wear Behaviour of TiAlN Coatings," *Advanced Materials Research*, Vol. 1137, pp. 24-38.
60. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2016), "Performance of 75Cr<sub>3</sub>C<sub>2</sub>-25NiCr coating produced by HVOF process in a coal-fired thermal power plant," *Advanced Materials Research*, Vol. 1137, pp. 88-100.
61. Kumar, P., and **Sidhu, B. S.**, (2016), "Characterization and high-temperature erosion behaviour of HVOF thermal spray cermet coatings," *Journal of Materials Engineering and Performance*, Vol. 25, pp. 250-258.
62. Goyal, R., **Sidhu B. S.**, and Chawla, V., (2017), "Improving the high-temperature oxidation resistance of ASME-SA213-T11 boiler tube steel by Plasma Spraying with CNT reinforced Alumina Coatings," *International Journal of Anti-Corrosion Methods and Materials*, Vol. 65, Issue 2, pp. 217-223.
63. Goyal, R., **Sidhu B. S.**, and Chawla, V., (2017), "Characterization of Plasma Sprayed Carbon Nanotubes (CNTs) Reinforced Alumina Coatings on ASME-SA213-T11 Boiler Tube Steel", *The International Journal of Advanced Manufacturing Technology*, Vol. 92, Issue 9-12, pp. 3225-3235.
64. Mittal, R. and **Sidhu, B. S.**, (2018), "Oxidation Behaviour of T91/347H Welds," *Journal of Materials Processing Technology*, Vol. 261, pp. 266-279.
65. Mittal, R. and **Sidhu, B. S.**, (2018), "Microstructural and Mechanical Studies of T91/T22 Welded Joints," *Transactions of Indian Institute of Metals*, Vol. 71, Issue 8, pp. 1985-2000.
66. Mittal, R. and **Sidhu, B.S.**, (2018), "Microstructural and Mechanical Properties of Dissimilar Metal weldment of Ferritic and Austenitic Steels," *Soldadura y tecnologías de union*, Vol. 29, Issue 154, pp. 50-54.
67. Singh, B., Singh, G. and **Sidhu, B. S.**, (2018), "Analysis of Corrosion Behavior and Surface Properties of Plasma-Sprayed HA/Ta Coating on CoCr Alloy," *Journal of Thermal Spray Technology*, Vol. 27, No. 8, pp. 1401-1413.
68. Goyal, R., **Sidhu, B. S.**, and Chawla, V., (2018), "Improving the high-temperature oxidation resistance of ASME-SA213-T11 boiler tube steel by plasma spraying with CNT-reinforced alumina coatings," *Anti-Corrosion Methods and Materials*, Vol. 65, N0. 2, pp. 217-223.
69. Singh, J., Chatha, S. S., and **Sidhu, B. S.**, (2018), "Influence of soil conditions on abrasion wear behaviour of tillage implements," *Int. J. Latest Trends Eng. Technol*, pp. 258-263.
70. Singh, B., Singh, G., **Sidhu, B. S.**, and Bhatia, N., (2019), "In-vitro assessment of HA-Nb coating on Mg alloy ZK60 for biomedical applications," *Journal of Materials Chemistry and Physics*, Vol. 231, pp. 138-149.
71. Singh, B., Singh, G. and **Sidhu, B. S.**, (2019), "Investigation of the In-Vitro Corrosion Behavior and Biocompatibility of Niobium (Nb)-Reinforced Hydroxyapatite (HA) Coating on CoCr Alloy for Medical Implants," *Journal of Materials Research*, Vol. 34, No. 10 pp. 1678-1691.
72. Singh, B., Singh, G. and Sidhu, B. S., (2019), "*In vitro* investigation of Nb-Ta alloy coating deposited on CoCr alloy for biomedical implants," *Surface and Coatings Technology*, Vol. 377, 15 November 2019, 124932.
73. Singh, H., Ang, A., Mathews, S., Villiers-Lovelock, H. and **Sidhu, B. S.**, (2019), "Thermal Spray for Extreme Environments –Editorial," *Journal of Thermal Spray Technology*, Vol. 28, No. 7, pp. 1339-1345.

74. Singh, B., Singh, G. and **Sidhu, B. S.**, (2019), "Analysis of Corrosion Behaviour and Surface Properties of Plasma Sprayed Composite Coating of HA-Ta on Biodegradable Mg Alloy ZK60," *Journal of Composite Materials*, Vol. 53, pp.2661-2673.
75. Chawla, V., **Sidhu B. S.**, Rani, A. and Handa, A., (2019), "High-temperature corrosion behavior of some post-plasma-spraying-gas-nitrided metallic coatings on a Fe-based superalloy", *Materials and Corrosion*, Vol. 70, Issue 12, pp. 2157-2178.
76. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2020), "Effect of Surface Alloying on Wear Behaviour of EN-47 Steel ", *Materials Today: Proceeding*, Vol. 21, pp. 1340-1349.
77. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2020), "Abrasive Wear Behavior of Newly Developed Weld Overlaid Tillage Tools in Laboratory and in Actual Field Conditions", *Journal of Manufacturing Processes*, Vol. 55, pp. 143-152.
78. Kumar M., Sidhu, H. S. and **Sidhu B. S.**, (2020), "Effect of different operating parameters on the slurry erosion behavior of cryo-treated hydro-turbine steel", *Materials Today: Proceeding*, Vol. 28, Part 3, pp. 1429-1438.
79. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2020), "Effect of alloying elements in Fe-based Hardfacings to Improve the Abrasive Wear behavior of Ploughshares, *Proc. IMechE Part C: J. Mechanical Engineering Science* Vol. 234(23), pp. 4737-4750.
80. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2020), "Tribological performance of hardfaced and heat treated EN-47 steel used for tillage applications ", *Surf. Topogr.: Metrol. Prop.*, Vol. 8, pp. 1-16.
81. Goyal, R., **Sidhu, B. S.**, and Chawla, V., (2020), "Hot Corrosion Performance of Plasma-Sprayed Multiwalled Carbon Nanotube–Al<sub>2</sub>O<sub>3</sub> Composite Coatings in a Coal-Fired Boiler at 900 °C," *Journal of Materials Engineering and Performance*, Vol. 29, pp. 5738-5749.
82. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2021), "Abrasive wear characteristics and microstructure of Fe-based overlaid ploughshares in different field conditions", *Soil & Tillage Research*, Vol. 205, pp. 1-12.
83. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2021), "Performance Evaluation of Surface Overlaid EN-42 Steel for Tillage Applications", *J. of Tribology*, Vol. 143, pp. 1-11.
84. Kumar M., Sidhu, H. S. and **Sidhu B. S.**, (2021), "Parametric and microstructural analysis of cryogenically treated austenitic stainless steel", *Materials Today: Proceeding*, Vol. 45, Part 6, pp. 4511-4519.
85. Jindal, C., **Sidhu, B. S.**, Kumar, P. and Sidhu, H. S., (2022), "Performance of hardfaced/heat treated materials under solid particle erosion: A systematic literature review", *Materials Today: Proceeding*, Vol. 50, Part 5, pp. 629-639.
86. Singh, H., Chatha, S.S. and **Sidhu B. S.**, (2022), "Oxidation Performance of TP347H Superheater Steel after Depositing Ceria-doped Cr<sub>3</sub>C<sub>2</sub>–25NiCr coatings", *Multiscale and Multidiscip. Model. Exp. and Des.* Vol. 5, pp. 403-426.
87. Singh, H., Chatha, S.S. and **Sidhu B. S.**, (2022), "Ceria-Doped Cr<sub>3</sub>C<sub>2</sub>–NiCr Coatings on Austenite Steel for Investigation in Actual Boiler Environment," *Arab J Sci Eng*, Vol 48, pp. 3723–3747.
88. Singh, H., Chatha, S.S. and **Sidhu B. S.**, (2023), "Hot Corrosion Resistance of CeO<sub>2</sub>-Doped Cr<sub>3</sub>C<sub>2</sub>–NiCr Coatings on Austenite Steel Against Molten Salt (Na<sub>2</sub>SO<sub>4</sub>–60% V<sub>2</sub>O<sub>5</sub>) Environment," *Journal of Bio-and Tribo-Corrosion*, Vol 9 (7), pp. 403-426.
89. Singh, H., Chatha, S.S. and **Sidhu B. S.**, (2024), "Hot Corrosion Resistance of HVOF and D-gun Sprayed Conventional and Ceria Modified 75Cr<sub>3</sub>C<sub>2</sub>–25NiCr Coatings on TP347H Steel," Accepted for publication to *J. Fail. Anal. and Preven.*

### **Indian Journals (31)**

90. Bhatia, R., Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2010), "Erosion - Corrosion Resistance of Carbide Based Thermal Spray Coatings: A Review" *Indian Journal of Engineering, Science and Technology*, Vol. 4, No. 1, pp. 57-62.
91. Kumar, P., and **Sidhu, B. S.**, (2010), "Degradation of Pulverized Coal Burner Nozzles: A Review," *Indian Journal of Engineering, Science and Technology*, Vol.4, No. 1, pp. 63-66.
92. Sidhu, H. S., Lal, G. and **Sidhu, B. S.**, (2010), "Remedies Measure Against Hot Corrosion of Boiler Tube Steels: A Review", *Indian Journal of Engineering, Science and Technology*, Vol.4, No. 1, pp. 67-71.

93. Chatha, S. S., Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2010), "High Temperature Corrosion Behaviour of Ni-based Thermal Spray Coatings: A Review", *Indian Journal of Engineering, Science and Technology*, Vol. 4, No. 1, pp. 72-77.
94. Goyal, R., **Sidhu, B. S.** and Grewal, J.S., (2010), "Surface engineering and detonation gun spray coatings," *International Journal of Engineering Studies*, Vol. 2, No. 3, pp. 351-357.
95. Goyal, R., Chawla, V. and **Sidhu B. S.**, (2011), "State of Art: Thermal Spraying and Performance of Hard Coatings: A Review" *International Journal of Research in Mechanical Engineering and Technology*, Vol. 1, No.1, 22-26.
96. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2011), "Role of Post Treatment in Thermal Spray Coatings," *International Journal of Materials Science and Engineering*, Vol. 2, No. 1-2, pp. 153-162.
97. Goyal, R., Chawla, V., **Sidhu B. S.** and Singh, K., (2012), "High Temperature Oxidation and Carbon Nano Tubes-An Overview" *International Journal of Research in Mechanical Engineering and Technology*, Vol. 2, No.1, 55-58.
98. Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "Characterisation of 80 % Cr<sub>3</sub>C<sub>2</sub> - 20 % (Ni-20Cr) coating and erosion behavior" *Asian Journal of Engineering and Applied Technology*, Vol. 1, No. 2, pp. 5-12.
99. Kumar, P. and **Sidhu, B. S.**, (2012), "Interconnection of Modules of Reconfigurable Modular Robots-A Review," *Asian Journal of Engineering and Applied Technology*, Vol. 1, No. 2, pp. 21-25.
100. Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "Characteristic parameters and erosion behaviour of 65% Cr<sub>3</sub>C<sub>2</sub>-35% NiCr coating," *International Journal of Surface Engineering and Materials Technology*, Vol.2, No.2, pp. 39-47.
101. Mittal, R., Goyal, L. and **Sidhu, B.S.**, (2013), "Study of Corrosion Behavior of SA213T91 Boiler Steel in the Environment of Air and Molten Salt of Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub> at 900<sup>0</sup>C," *International Journal of Research in Mechanical Engineering and Technology*, Vol. 3, No. 2, pp. 58-63.
102. Goyal, R., Chawla, V. and **Sidhu, B. S.**, (2013) "Carbon Nano Tubes: Synthesis and Properties" *International Journal of Research in Mechanical Engineering and Technology*, Vol. 3, No.2, 139-142.
103. Mittal, R., Goyal, L. and **Sidhu, B. S.**, (2013), "Comparative Study on Corrosion Behavior of SA213T22 and SA213T91 Steels in Molten Salt Environment of Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub> at 900 <sup>0</sup>C," *Asian Review of Mechanical Engineering*, Vol. 2, No. 2, pp. 19-26.
104. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2013), "Hot Corrosion in Power Plant Boilers and Role of Coatings: A Review", *Steam and Boilers*, Vol. 7, Issue 2, pp. 199-201.
105. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2013), "In vitro Corrosion Investigations of Plasma Sprayed Hydroxyapatite Coated Titanium", *International Journal of Surface Engineering and Materials Technology*, Vol. 3 No. 2, pp. 16-21.
106. Kumar, A., Kumar, P. and **Sidhu, B. S.**, (2014), "Influence of tool shoulder diameter on mechanical properties of friction stir welded dissimilar aluminium alloys 2014 and 6082," *International Journal of Surface Engineering and Materials Technology*, Vol. 4, No. 1, pp. 5-10.
107. Kumar, P. and **Sidhu, B. S.**, (2014), "Heat Treatment Effect on Erosion Characteristics of Hypereutectic Structured Hardface Overlay," *International Journal of Surface Engineering and Materials Technology*, Vol. 4, No. 2, pp. 23-28.
108. Mittal, R. and **Sidhu, B. S.**, (2014), "Microstructural and Mechanical Characterization of the Different Zones of the T91/T22 Weldment," *International Journal of Surface Engineering and Materials Technology*, Vol. 4, No. 2, pp. 45-49.
109. Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2015), "Effect of Compositional Variation of Cr<sub>3</sub>C<sub>2</sub>-NiCr Coating on the Corrosion Behaviour at 550°C," *International Journal of Surface Engineering and Materials Technology*, Vol 5, No. 1, pp. 54-61.
110. Singh, B., Singh, G. and **Sidhu, B. S.**, (2016), "The Effect of Hydroxyapatite Coating on Corrosion Resistance of Biocompatibility of Magnesium Alloy Bio-Implant: A Review," *Asian Review of Mechanical Engineering*, Vol. 5, No. 1, pp. 56-67.
111. Goyal, M., Chawla, V. and **Sidhu, B. S.**, (2016), "Degradation of Boiler Tube Materials at High Temperature Corrosion and Preventive Measures- A Review," *Asian Review of Mechanical Engineering*, Vol. 5, No. 1, pp. 82-87.

112. Singh, J., Chatha, S. S. and **Sidhu, B. S.**, (2016), "Role of Tungsten in Ni and Co-Based Hardfacings under Abrasive Conditions," Asian Journal of Engineering and Applied Technology, Vol. 5, No. 1, pp. 54-57.
113. Jindal, C., Kumar, P., **Sidhu, B. S.** and Sidhu, H. S., (2016), "Friction Stir Processing: A revolutionary technique in material development" International Journal of Surface Engineering and Materials Technology, Vol 5, No. 2, pp. 33-35.
114. Goyal, R., **Sidhu, B. S.** and Chawal, V., (2017), "Corrosion Behaviour of CNT-Alumina Coated T22 Boiler Steel in Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub> Environment at 900° C Temperature" Journal of Modern Chemistry & Chemical Technology, Vol.8, No.3, pp. 1-16.
115. Goyal, R., **Sidhu, B. S.** and Chawal, V., (2017), "Characterisation of plasma sprayed CNT-Alumina composite coatings on boiler tube steel" Journal of Polymer & Composites, Vol. 5, Issue 3, pp. 1.
116. Goyal, R., **Sidhu, B. S.** and Chawal, V., (2018), "Hot Corrosion Studies of Plasma-Sprayed MWCNTs-Al<sub>2</sub>O<sub>3</sub> Composite Coatings in Molten Salt Environment at 900<sup>0</sup> C" International Journal of Surface Engineering and Materials Technology, Vol.8, No.2, pp. 10-17.
117. Singh, S., Singh, G. and **Sidhu, B. S.**, (2018), "Current Trends in Bio-Implants' Research" Asian Journal of Engineering and Applied Technology, Vol. 7, No. S2, pp. 57-59.
118. Singh, J., Chatha, S.S. and **Sidhu B. S.**, (2018), "Influence of Tillage Depth and Plough Speed on Performance of Primary Tillage Tools", Asian Journal of Engineering and Applied Technology, Vol. 7, No. S2, pp. 138-142.
119. Goyal, R., **Sidhu, B. S.** and Chawal, V., (2018), "Characterisation of plasma sprayed CNT-Alumina composite coatings on boiler tube steel" Journal of Polymer & Composites, Vol.5, No.3, pp. 1-15.
120. Goyal, R., **Sidhu, B. S.** and Chawal, V., (2018), "Oxidation Behaviour of Plasma Sprayed Carbon Nanotubes-Alumina Coated ASME-SA213-T291 Boiler Tube Steel" Journal of Material & Metallurgical Engineering, Vol.7, No.3, pp. 1-15.

#### ***International Conferences (52)***

121. **Sidhu, B. S.** and Prakash, S., (2002), "Development of Hot Corrosion Resistant Coatings," Presented in International Conference on Advances in Materials and Materials Processing, 1-3<sup>rd</sup> Feb. 2002, IIT, Kharagpur, India.
122. **Sidhu, B. S.** and Prakash, S., (2003), "Plasma spray coatings of Ni-20Cr on boiler tube steel and evaluation of its oxidation behaviour at 900°C in air," Presented in International Symposium, "Corrosion Science in the 21<sup>st</sup> Century held at Manchester (UK) on 6-11<sup>th</sup> July, 2003 and Published in, "Journal of Corrosion Science and Engineering."
123. **Sidhu, B. S.**, Puri, D. and Prakash, S., (2003), "Utilisation of Fly Ash to Develop Hot Corrosion and Wear Resistant Coatings," Presented in International Conference, "2<sup>nd</sup> Surface Engineering Congress and Exposition," 15-18<sup>th</sup> September, Indianapolis (USA).
124. **Sidhu, B. S.** and Prakash, S., (2003), "Studies of the Plasma Spray Coating for Protection Against Hot Corrosion," Proc. Int. Conf. "Advances in Materials and Processes for Industrial Applications," 25-27<sup>th</sup> September, Pune (India), pp. 74-78.
125. Chawla, V., **Singh, B.** and Batra, U., (2005), "Crack Initiation & Propagation in Ni-Mo Austempered Ductile Iron (Adi)," Proc. of 14<sup>th</sup> ISME Int. Conf., "Mechanical Engineering in Knowledge Age," held at DCE, Delhi, India, 12-14<sup>th</sup> December, pp. 99-104.
126. Chawla, V., **Sidhu, B. S.** and Prakash, S. (2006), "State of Art: Applications of Mechanical Alloyed Nanomaterials-A Review," Proc. Int. Conf., "Advances in Materials and Materials Processing," held at IIT, Kharagpur, India, 3-5 February, pp. 464-473.
127. **Sidhu, H. S.**, **Sidhu, B. S.** and Prakash, S., (2006), "Hot Corrosion Behaviour of HVOF Sprayed Coatings on ASTM SA213-T11 Steel", Presented in International Thermal Spray Conference-06, organized by ASM, 15-18 May, Seattle, Washington (USA).
128. **Sidhu, H. S.**, **Sidhu, B. S.** and Prakash, S., (2006), "Review on the part of HVOF thermal spray coating in protection to corrosion", TMS Fall Extraction and Processing Division: Sohn International Symposium on Adv. Processing of Metal and Materials, 27-31 August, San Diego CA, USA, Vol. 7, pp. 383-391.
129. Chawla, V., Prakash, S, Puri D. and **Sidhu, B. S.**, (2006), "Plasma Sprayed Coatings for Protection against Hot Corrosion in Energy Generation and Coal Gasification Systems: a review," Proc. Int. Conf.,

- “Advances in Mechanical Engineering,” held at BBSEC, Fatehgarh (Pb.), India 1-3<sup>rd</sup> December, Module-III, pp. 176-181.
130. Tiwana, J. S., **Sidhu, B. S.**, Garg, H. K. and Prakash, S., (2006), “Review of detonation Gun Coatings to Improve Surface Resistance,” Proc. Int. Conf., “Advances in Mechanical Engineering,” held at BBSEC, Fatehgarh (Pb.), India 1-3<sup>rd</sup> December, Module-III, pp. 192-195.
  131. Chawla, V., Praksh, S, Puri D. and **Sidhu, B. S.**, (2006), “State of Art: Nanomaterials: a review,” Proc. Int. Conf., “Advances in Mechanical Engineering,” held at BBSEC, Fatehgarh (Pb.), India 1-3<sup>rd</sup> December, Module-I, pp. 244-249.
  132. **Sidhu, B. S., Chawla, V., Puri, D. and Praksh, S. (2007), “State of Art: Plasma Sprayed Nanostructured Coatings: A Review,” Presented in International Materials and AustCeram Conference, held at Sydney, Australia, 4-6<sup>th</sup> July.**
  133. Chawla, V., Prakash, S., Puri, D., Sidhu, B. S. and Singla, M. (2007) “State of art: Hot Corrosion: A Review”, Global Conference on “Production & Industrial Engineering (CPIE-2007)”, organized by Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, Punjab, 22-24<sup>th</sup> March.
  134. **Sidhu, H. S., Sidhu, B. S. and Prakash, S., (2008), “Wear Characteristics of HVOF deposited Cr<sub>3</sub>C<sub>2</sub>-NiCr and WC-Co coatings by using LPG as the fuel gas”, Presented in International Conference on Advanced Tribology (ICAT), 3-8<sup>th</sup> December, Singapore.**
  135. Goyal, R., **Sidhu, B. S.** and Grewal, J. S., (2010) “An Innovation in Manufacturing- Detonation gun sprayed Wear Resistance Coatings,” Presented in International Conference, “Engineering Innovations: A Fillip to Economic Development,” Continental Group of Institution Jalvehra (Pb.), 18-20<sup>th</sup> February.
  136. Goyal, R., **Sidhu, B. S.** and Chawla, V., (2010) “Detonation gun spray coating to enhance the wear resistance – A Review”, Proc. 2<sup>nd</sup> International Conference on Production and Industrial Engineering (CPIE-2010), held at Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, Punjab, 2-4<sup>th</sup> December, pp. 314-318.
  137. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2010) “A Review on Thermal Sprayed Hydroxyapatite Coated Bio-implants” Presented in International Conference on “Biomedical Engineering and Assistive Technologies (BEATS-2010),” held at Dr. B.R. Ambedkar National Institute of Technology Jalandhar, 144 011, Punjab, INDIA, 17-19 December
  138. **Sidhu, B. S., Grewal, H. S. and Sidhu, H. S., (2011), “Influence of Cryogenic Treated Electrode on EDM Output Parameters,” Presented in 9<sup>th</sup> International Conference on Advances and Trends in Engineering Materials and Their Applications ( AES-ATEMA’2011), held at Montreal, Canada, 1-5<sup>th</sup> August and published in Proceeding, pp. 219-225.**
  139. Mittal, R. and **Sidhu B.S.**, (2012), “Metallurgical Aspects of Dissimilar Metal Weldments: A Review”, Proc. Int. Conf., “Advancements and Futuristic Trends in Mechanical and Materials Engineering,” Punjab Technical University, Jalandhar, Punjab, India, 5-7<sup>th</sup> October, pp. 669–675.
  140. Bhatia, R., Sidhu, H. S., and **Sidhu, B. S.**, (2012), “Characterization of 80%Cr<sub>3</sub>C<sub>2</sub>-20%NiCr Coatings and its Erosion Behaviour,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at PTU, Kapurthala (Pb.), India, 5-7<sup>th</sup> October.
  141. Bhatia, R., Sidhu, H. S., and **Sidhu, B. S.**, (2012), “Characteristic Parameters and Erosion Behavior of 65%Cr<sub>3</sub>C<sub>2</sub>-35%NiCr Coatings,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at PTU, Kapurthala (Pb.), India, 5-7<sup>th</sup> October.
  142. Kumar, P., and **Sidhu, B. S.**, (2012), “Interconnection of Modules of Reconfigurable Modular Robots- A Review,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at PTU, Kapurthala (Pb.), India, 5-7<sup>th</sup> October.
  143. Goyal, R., Singh, K., Chawla, V. and **Sidhu, B. S.** (2012), “State of Art: Enhancement of Wear Resistance By Hardfacing: A Review,” 2nd International Conference on Advances in Materials & Manufacturing Technology (AMMT-2012), organized by Chitkara School of Mechanical Engineering, Chitkara University, Punjab, 6<sup>th</sup> October, pp 128-132.
  144. **Bhatia, R., Sidhu, H. S., and Sidhu, B. S., (2013), “Erosion Resistance of Cr<sub>3</sub>C<sub>2</sub> -25% (Ni-20Cr) Coating at Different Temperatures”, Presented in International Thermal Spray Conference and Exposition (ITSC), organized by ASM, 13-15<sup>th</sup> May, Busan, South Korea.**

145. Singh, G., Singh, H., and **Sidhu, B. S.**, (2013), "In Vitro Corrosion Investigations of Plasma Sprayed Hydroxyapatite Coated Titanium," Presented in International Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at PTU, Kapurthala (Pb.), India, 3-6<sup>th</sup> October.
146. Mittal, R., Goyal, L., and **Sidhu, B. S.**, (2013), "Comparative Study on Corrosion Behavior of SA213T22 and SA213T91 Steels in Molten Salt Environment of Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub> at 900 °C," Presented in International Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at PTU, Kapurthala (Pb.), India, 3-6<sup>th</sup> October and published in Journal.
147. Grewal, J. S., **Sidhu, B. S.** and Prakash, S. (2013), "Mechanical and microstructural properties of nano-structured and conventional TiAlN coatings deposited on AISI-316 boiler steel" Int. Conf. "Research and Innovations in Mechanical Engineering (ICRIME-2013)," held at Guru Nanak Dev Engineering college, Ludhiana (Pb.), 24-26<sup>th</sup> October.
148. Kumar, P., and **Sidhu, B. S.**, (2014), "Heat Treatment Effect on Erosion Characteristics of Hypereutectic Structured Hardface Overlay," Presented in International Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at PTU, Kapurthala (Pb.), India, 16-18<sup>th</sup> October and published in Journal.
149. Goyal, R., Chawla, V. and **Sidhu, B. S.**, (2014), "Study on porosity of plasma sprayed nano tube reinforced composite coatings " Presented in International Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at PTU, Kapurthala (Pb.), India, 16-18<sup>th</sup> October.
150. **Chatha, S. S., Sidhu, H. S., and Sidhu, B. S.**, (2014), "The Effect of Al<sub>2</sub>O<sub>3</sub> and Cr<sub>2</sub>O<sub>3</sub> Top Coat on Hot Corrosion Behaviour of HVOF Sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr Coating on T91 Boiler Steel," Presented in International Conf., "3<sup>rd</sup> Biennial Conference Combined Australian Materials Societies," held at Charles Perkins Centre, University of Sydney, Sydney (Australia), 26-28<sup>th</sup> November.
151. Grewal, J. S., **Sidhu, B. S.** and Prakash, S. (2014), "Characterization of Nanostructured and Conventional TiAlN Coatings Deposited on AISI-304 Boiler Steel," Presented in International Conf., "3<sup>rd</sup> Biennial Conference Combined Australian Materials Societies," held at Charles Perkins Centre, University of Sydney, Sydney (Australia), 26-28<sup>th</sup> November.
152. Mittal, R., and **Sidhu, B. S.**, (2014), "Studies on Microstructural Properties of GTAW Weldment of Ferritic steels," Presented in International Conf., "3<sup>rd</sup> Biennial Conference Combined Australian Materials Societies," held at Charles Perkins Centre, University of Sydney, Sydney (Australia), 26-28<sup>th</sup> November.
153. **Sidhu, B. S.**, (2014), "India: An Emerging Destination for Technical Education," Presented in International Conference of World Engineering Education Forum (WEEF), "Engineering Education for a Global Community," 3-6<sup>th</sup> December, Dubai International Convention and Exhibition Centre, United Arab Emirates, Dubai.
154. Singh, G., **Sidhu, H. S.** and **Sidhu, B. S.**, (2015), "Characterisation and In Vitro Corrosion Resistance of Plasma Sprayed Hydroxyapatite and Hydroxyapatite – Silicon Oxide Coatings on 316L SS," Proc. Int. Conf., "Thermal Spray Conference & Exposition," Long Beach, California, (USA), 11-14<sup>th</sup> May, pp. 941-947.
155. Grewal, J. S., **Sidhu, B. S.** and Prakash, S., (2015), "Wear Behaviour of Conventional and Nanostructured Thin Films of Titanium Aluminium Nitride," Proc. Int. Conf., "Thermal Spray Conference & Exposition," Long Beach, California, (USA), 11-14<sup>th</sup> May, pp. 1199-1207.
156. Singh, G., **Sidhu, H. S.** and **Sidhu, B. S.**, (2016), "In-Vitro Corrosion Behavior of Plasma Sprayed Hydroxyapatite Coated Bio-Implants: A Review," eProceedings 17<sup>th</sup> Asian Pacific Corrosion Control Conference (APCCC17), IIT Bombay, Mumbai, India, 27-30<sup>th</sup> January, Paper No. 17037.
157. Jindal, C., Kumar, P., **Sidhu, B. S.** and **Sidhu, H. S.**, (2016), "Friction Stir Processing: A revolutionary technique in material development" Presented in International Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at Baba Farid CET, Bathinda, (Pb.), India, 25-27<sup>th</sup> February.
158. Singh, H., Chatha, S. S. and **Sidhu, B. S.**, (2016), "Residual Stresses in Thermal Spray Coatings and Role of Rare Earth Elements" Presented in International Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at Baba Farid CET, Bathinda, (Pb.), India, 25-27<sup>th</sup> February.
159. **Singh, G., Sidhu, H. S. and Sidhu, B. S.**, (2016), "Characterisation and In Vitro Corrosion Resistance of Plasma Sprayed Hydroxyapatite and Hydroxyapatite – Silicon Oxide Coatings on 316L SS", Proc.

- Int. Conf., “Thermal Spray Conference & Exposition,” Shanghai, P.R. China, 10-12<sup>th</sup> May, pp 812-819.
160. Mittal, R. and Sidhu, B.S., (2016), “Microstructural and Mechanical Properties of Dissimilar Metal weldment of Ferritic and Austenitic Steels,” Proc. 3<sup>rd</sup> International Congress & 21<sup>st</sup> Technical Sessions on Welding and Joining Technologies (INTERJOIN), Campus of Gijon, Gijon, Spain, 17-19<sup>th</sup> May.
  161. Goyal, R., Sidhu, B. S. and Chawla, V., (2016), “Characterization of Plasma Sprayed CNT Reinforced Alumina Coatings on ASME-SA213-T91 Boiler Tube Steel” Presented in International Conf., “6<sup>th</sup> International Conference and Exhibition on Materials Science and Engineering,” Atlanta, USA, 12-14<sup>th</sup> September.
  162. Sidhu, B.S., (2017), “Plasma Spray Coatings with Nano Structured Materials,” Plenary Talk on 7<sup>th</sup> August 2017, during ICANM 2017: International Conference & Exhibition on Advanced & Nano Materials held at Four Points by Sheraton Toronto Airport, Toronto Canada, 7-9<sup>th</sup> August.
  163. Sidhu, B.S., Chawla, V., and Prakash, S., (2017), “High Temperature Oxidation Behaviour of Nanostructured and Conventional AlCrN Hard Coatings on ASTM-SA213-T-22 Boiler Steel Under Cyclic Conditions,” Presented in ICANM 2017: International Conference & Exhibition on Advanced & Nano Materials held at Four Points by Sheraton Toronto Airport, Toronto Canada, 7-9<sup>th</sup> August.
  164. Sidhu, B.S., and Chawla, V., (2017), “Engineering Nanostructured Thermal Spray Coatings for High Temperature Corrosion and Erosion Applications,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at Shahid Udham Singh College of Engineering and Technology (SUS CET), Tangori, Mohali (Punjab), India, 2-4<sup>th</sup>, November 2017.
  165. Jindal, C., Sidhu, B.S., Sidhu, H. S., and Kumar, P., (2018), “A Review on Friction Stir Processing an Insurgent Technique for Surface Modification,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at Panjab University SSG Regional Center (PUSSGRC), Hoshiarpur (Punjab), India, 15-17<sup>th</sup>, November 2018.
  166. Singh, J., Chatha, S. S., and Sidhu, B.S. (2018), “Influence of Tillage Depth and Plough Speed on Performance of Preliminary Tillage Tools,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at Panjab University SSG Regional Center (PUSSGRC), Hoshiarpur (Punjab), India, 15-17<sup>th</sup>, November 2018.
  167. Singh, J., Chatha, S. S., and Sidhu, B.S. (2018), “Effect of Ploughshare Wear on Tillage Quality and Tractor Fuel Consumption,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at Panjab University SSG Regional Center (PUSSGRC), Hoshiarpur (Punjab), India, 15-17<sup>th</sup>, November 2018.
  168. Singh, H., Chatha, S. S., and Sidhu, B.S. (2018), “Performance of D-Gun Sprayed Coatings for High Temperature Applications,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at Panjab University SSG Regional Center (PUSSGRC), Hoshiarpur (Punjab), India, 15-17<sup>th</sup>, November 2018.
  169. Singh, H., and Sidhu, B.S. (2019), “Biodegradable Magnesium (Mg) Implants: Challenges and Opportunities,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at IIT Ropar (Punjab), India, 5-7<sup>th</sup>, December 2019.
  170. Sidhu, B.S. (2020), “Research Activities in Mechanical and Materials Engineering,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held online at MRS PTU Bathinda (Punjab), India, 19-20<sup>th</sup>, December 2020.
  171. Mittal, R., and Sidhu, B.S. (2021), “Technological Aspects of Dissimilar Metal Weldments,” Presented in International Conf., “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at IIT Ropar (Punjab), India, 9-11<sup>th</sup>, December 2021.
  172. Sidhu, B.S. (2022), “Renewable Energy for Sustainable Growth of India: The Context and Roadmap Ahead,” Presented during the 76<sup>th</sup> Annual Convention and International Conference “Achieving US\$ 5 Trillion Indian Economy: Strengthening Quality Infrastructure: Reference to Oils, Fats and Oleo

Chemicals Sector," held at NPL (National Physical Laboratory) New Delhi, India, 24-25<sup>th</sup> June 2022.

### **National Conferences (27)**

173. Prakash, S., Singh, S., **Sidhu, B. S.** and Madeshia, A., (2001), "Tube Failures in Coal Fired Boilers," Proc. National Seminar on Advances in Material and Processing, 9-10<sup>th</sup> Nov., IIT, Roorkee, India, pp. 245-53.
174. **Sidhu, B. S.** Chattopadhyaya, A. and Prakash, S., (2002), "Role of Coatings for Protection against Hot Corrosion and Erosion in Energy Generation Systems," Presented in 5<sup>th</sup> Punjab Science Congress, 7-9<sup>th</sup> Feb. 2002, TIET Patiala, India.
175. **Sidhu, B. S.** and Prakash, S., (2003), "Oxidation Kinetics of Boiler Tube Steels at 900<sup>o</sup>C," Presented in 6<sup>th</sup> Punjab Science Congress, 7-9<sup>th</sup> Feb. 2003, SLIET, Longowal, (Sangrur) India.
176. **Sidhu, B. S.** and Prakash, S., (2003), "Wear and High Temperature Oxidation Behaviour of Plasma Sprayed Fly Ash Coatings," Proc. National Conf., "Recent Developments in Mechanical Engineering," TIET, Patiala, India, 31Oct. -01 Nov. pp. 284-89.
177. Singh, H., **Sidhu, B. S.** and Prakash, S., (2003), "Characterisation of Plasma Sprayed Fly Ash Coatings," Presented in 13<sup>th</sup> National Conf. of ISME-2003 held at IIT, Roorkee 30-31<sup>st</sup> December, 2003.
178. Singh, H., **Sidhu, B. S.** and Prakash, S., (2004), "Role of HVOF Thermal Spray Coating to Improve Erosion Resistance of Materials: A Review," Proc. National Conf., "Precision Manufacturing," held at SLIET, Longowal (Sangrur), 11-12<sup>th</sup> December, pp. 92-97.
179. **Sidhu, B. S.** and Prakash, S., (2005), "Deleterious Effect of Molybdenum on the Cyclic Hot Corrosion Behaviour of Boiler Tube Steels in Molten Salt Environment at 900<sup>o</sup>C," Presented in 8<sup>th</sup> Punjab Science Congress, 7-9<sup>th</sup> Feb. 2005, Punjabi University, Patiala, India.
180. Tiwana J. S., **Sidhu, B. S.**, Garg H. K. and Gupta R., (2006), "An Introduction to Rapid Prototyping Technologies," Proc. National Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at GZS CET, Bathinda (Pb.), India 13-14<sup>th</sup> October, pp. 165-172.
181. Chawla, V., Puri D., **Sidhu, B. S.**, Praksh, S. and Singla M., (2006), "State of Art: Corrosion in Thermal Power Plants and Preventives Measures: a review," Proc. National Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at GZS CET, Bathinda (Pb.), India 13-14<sup>th</sup> October, pp. 294-302.
182. Singh, H., **Sidhu, B. S.** and Prakash, S., (2006), "Review on The Part of HVOF Thermal Spray Coating in Improving Resistance to Wear," Proc. National Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at GZS CET, Bathinda (Pb.), India 13-14<sup>th</sup> October, pp.303-310.
183. Sran K. S. and **Sidhu, B. S.**, (2006), "Taguchi Method to Design Optimization for Quality-An Overview," Proc. National Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at GZS CET, Bathinda (Pb.), India 13-14<sup>th</sup> October, pp.396-400.
184. Sidhu, H. S., **Sidhu, B. S.** and Prakash, S., (2007), "The Thermal Spray Technology: A Juggernaut in Surface Engineering," Proc. National Conf., "Advances in Materials and Manufacturing Technology (AMMT-2007)," held at PEC, Chandigarh, India 21-22<sup>nd</sup> September, pp.311-315.
185. Mittal, R., Goyal, L. and **Sidhu, B. S.** (2007), "An Analysis and Study of the Cold Spray Process and its Coatings," Proc. National Conf., "Advances in Materials and Manufacturing Technology (AMMT-2007)," held at PEC, Chandigarh, India 21-22<sup>nd</sup> September, pp.419-423.
186. Chawla, V., Puri D., Praksh, S, **Sidhu, B. S.** and Singla M., (2007), "Sate of Art: A Survey of the Studies on Hard TiAlN and AlCrN Coatings A review," Proc. National Conf., "Advances in Materials and Manufacturing Technology (AMMT-2007)," held at PEC, Chandigarh, India 21-22<sup>nd</sup> September, pp.430-434.
187. Chatha, S. S., Bhatia, R., Sidhu, H. S. and **Sidhu, B. S.**, (2010), "Impact of added Titanium Dioxide in dielectric of EDM on Surface Characteristics and MRR", Proc. National Conf., "Advancements & Futuristic Trends in Mechanical and Materials Engineering," held at YCoE, Talwandi Sabo (Bathinda), Punjab. India, 19-20<sup>th</sup> February, pp 155-121.
188. Mittal, R., Goyal, L. and **Sidhu, B. S.** (2011), "Some Studies on the Dissimilar Metal Weldments," Proc. National Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at PTU, Kapurthala (Pb.), India 7-8<sup>th</sup> October, pp.127-132.

189. Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2011), "Role of Post Treatment in Thermal Spray Coatings," Proc. National Conf., "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at PTU, Kapurthala (Pb.), India 7-8<sup>th</sup> October, pp. 354-363.
190. Sandhu, K. S., Chatha, S. S., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "Experimental analysis of microstructure and mechanical properties of friction stir welded Al-mg-Si alloy at different tool rotation speed," Presented in National Conf., "Advancements in Mechanical and Energy Environment, held at SLIET, Longowal (Pb.), India, 6-7<sup>th</sup> January.
191. Singh, K., Sidhu, H. S. and **Sidhu, B. S.**, (2012), "Friction stir welding of dissimilar aluminium alloy: a review", Presented in National Conf., "Advancements in Mechanical and Energy Environment, held at SLIET, Longowal (Pb.), India, 6-7<sup>th</sup> January.
192. **Sidhu, B. S.**, (2013), "Presentation of Experiments-Sharaddhanjali to Swami Vivekananda Ji," Presented in National Conf., "Swami Vivekananda on Education-A Vision for National Resurgence," held at New Delhi Convention Center, near Jantar-Mantar, New Delhi, India, 16-17<sup>th</sup> November.
193. Mittal, R. and **Sidhu, B. S.**, (2014), "A review of Dissimilar Metal Joints used in Industry," Proc. National Conference on Latest Developments in Materials, Manufacturing and Quality Control, GZS PTU Campus, 13-14<sup>th</sup> Feb., Bathinda, India, pp. 57-62.
194. Singh, G., Sidhu, H. S. and **Sidhu, B. S.**, (2014), "In-Vitro Corrosion Investigations of Plasma Sprayed Hydroxyapatite and Hydroxyapatite – Silicon Oxide Coatings on 316L SS", Proc. of CORSYM 2014, Indian Institute of Technology, Bombay, India, 20-21<sup>st</sup> February, pp 244-259.
195. Singh, H., Chatha, S. S. and **Sidhu, B. S.**, (2015), "Role of rare earth elements in thermal spray coatings,," Proc. National Conference on Latest Developments in Materials, Manufacturing and Quality Control, GZS PTU Campus, Bathinda, India, 19-20<sup>th</sup> February, pp. 294-297 (ISSN/ISBN: 978-93-5196-055-3).
196. **Sidhu, B. S.**, (2020), "Reshaping Teaching & Learning: Use of online Tools and Technologies," One Day Workshop, "Online Teaching and Effective Learning: Bridging the Gap," Online organised by Society of Mechanical and Materials Engineers (SOMME), Bathinda (Punjab) India, 23<sup>rd</sup> May 2020.
197. **Sidhu, B. S.**, (2021), "Presidential address: Data Privacy and Protections," Online National Webinar, organised by Gujranwala Guru Nanak Khalsa College Ludhiana (Punjab) India, 28<sup>th</sup> January 2021.
198. **Sidhu, B. S.**, (2022), "NEP 2020- Role of Technical Institutions: Governance and Leadership," Presented during National Seminar on "ISTE Section Faculty Convention on Role of Technical Education Institutions under New National Education Policy," held at NIT Jalandhar (Punjab) India, 30<sup>th</sup> September 2022.
199. **Sidhu, B. S.**, (2023), "Role of Higher & Technical Education in Self-Reliant Bharat", Presented on 9<sup>th</sup> April 2023, "GYANOTSAV (PUNJAB)-2023: Self-Reliant Bharat Through Education," held at Rattan Group of Institutions, Sohana, Sector-78, SAS Nagar, Mohali (Punjab) India, 8-9<sup>th</sup> April 2023.

## **Annexure-D**

### **Foreign Visits**

#### **United Kingdom (UK)-01**

1. Participated in International Symposium, “Corrosion Science in the 21<sup>st</sup> Century,” held at Manchester, 6-11<sup>th</sup> July, 2003.
2. Visited to attend marriage function and for education tour 30 Aug to 12 Sep 2018.

#### **United States of America (USA)-06**

2. Participate in International Thermal Spray Conference and Exposition (ITSC), 15-18<sup>th</sup> May 2006, Seattle, Washington.
3. From 9-25<sup>th</sup> June 2012
  - Participated in ASEE Inaugural International Forum, 9-10<sup>th</sup> June, San Antonio, Texas.
  - Visited San Jose State University (SJSU), San Jose and hold a meeting for collaboration on 12<sup>th</sup> June.
  - Visited University of Washington, Seattle and hold a meeting for collaboration on 15<sup>th</sup> June.
  - Participated in study tour with the other delegates from India, 17-24<sup>th</sup> June 2012 and visited the following universities:
    - University of Dallas, Dallas on 18<sup>th</sup> June.
    - University of Texas, Arlington Campus on 18<sup>th</sup> June (Afternoon).
    - Southern Methodist University (SMU), Dallas on 19<sup>th</sup> June.
    - Ohio State University Columbus on 20<sup>th</sup> June 2012.
    - Syracuse University on 21<sup>st</sup> June 2012.
    - Harvard Business School at Boston on 22<sup>nd</sup> June.
    - Visited Princeton University on 25<sup>th</sup> June.
4. From 20-23<sup>rd</sup> October 2013
  - Participated in Online Digital Education and Transformed Faculty Roles – Global Engineering Deans Council, Chicago, 20-22<sup>nd</sup> October.
  - Visited ASB Industries Ohio for Cold Spray interaction and for student training collaboration on 23<sup>rd</sup> October.
5. From 8-14<sup>th</sup> May 2015
  - Visited San Jose State University (SJSU), San Jose and hold a collaboration meeting on 8<sup>th</sup> May.
  - Participated in International Thermal Spray Conference and Exposition (ITSC), Long Beach, 10-14<sup>th</sup> May.
6. Participate in 6<sup>th</sup> International Conference and Exhibition on Materials Science and Engineering, 12-15<sup>th</sup> September 2016, Atlanta.
7. Visited Wayne State University, Detroit, Michigan and hold a meeting collaboration on 14<sup>th</sup> August 2017.

#### **Australia-02**

8. Participated in International Materials and AustCeram Conference, 4-6<sup>th</sup> July 2007, Sydney.
9. Participate in 3<sup>rd</sup> Biennial Conference of the Combined Australian Materials Societies (CAMS2014), 26-28<sup>th</sup> November 2014, Charles Perkins Centre, University of Sydney, Sydney.

#### **Canada-04**

10. From 25<sup>th</sup> July-5<sup>th</sup> August 2011
  - Visited the following universities and hold meetings for collaboration:
    - University of Toronto on 25<sup>th</sup> July.
    - McMaster University, Hamilton on 26<sup>th</sup> July.
    - Queens University on 28<sup>th</sup> July.
    - McGill University, Montreal on 4<sup>th</sup> August.
  - Participated in 9<sup>th</sup> International Conference on Advances and Trends in Engineering Materials and their Applications ( AES-ATEMA '2011), Montreal, 01-5<sup>th</sup> August.
11. From 24-29<sup>th</sup> October 2013

- Visited University of Toronto on 24<sup>th</sup> October and hold a collaboration meeting.
  - Visited University of Frazer Valley (UFV) on 29<sup>th</sup> October and hold a collaboration meeting.
12. From 24<sup>th</sup> April to 6<sup>th</sup> May 2015
- Visited and hold collaboration meetings to the following universities:
    - University of Fraser Valley, Vancouver on 24<sup>th</sup> April.
    - University of North British Columbia, Prince George on 29<sup>th</sup> April.
    - University of Windsor, Windsor on 30<sup>th</sup> April.
    - Loyalist College, Belleville, Ontario on 5<sup>th</sup> May.
    - Brock University, Niagara Region, St. Catharines, Ontario on 6<sup>th</sup> May.
13. Visited Canadian Universities from 15-24<sup>th</sup> September 2016
14. From 04<sup>th</sup> August to 26<sup>th</sup> August 2017
- Participated in, “ICANM2017: International Conference and Exhibition on Advanced & Nano Materials” Toronto, 07-09<sup>th</sup> August 2017.
  - Visited Thompson River University (TRU), Kamloops and hold a meeting for collaboration on 17<sup>th</sup> August 2017.
15. Visited Toronto, ON and St. John’s NL 30<sup>th</sup> May 2022 to 19<sup>th</sup> June 2022.

### **China-01**

16. Participated in Global Leadership in Engineering Education–Global Engineering Deans Council, Peaking University, Beijing, 20-22<sup>nd</sup> October 2011.

### **South Korea-01**

17. From 12-17<sup>th</sup> May 2013
- Participated in Thermal Spray Advisory Council meeting on 12<sup>th</sup> May.
  - Participated in International Thermal Spray Conference and Exposition (ITSC), Busan, 13-15<sup>th</sup> May.
  - Visited Dongguk University Seoul and hold a meeting for collaboration on 16<sup>th</sup> May.

### **Finland-01**

18. Delegate visit from 9-13<sup>th</sup> September 2013 for collaboration and to study the Alto Design Factory:
- Visited Helsinki Business and Science Park Viiki, University of Helsinki IP Finland and KAATO Network of IT Professionals on 9<sup>th</sup> September.
  - Visited Alto design Factory, Startup Sauna and Ministry of Education and Cultural on 10<sup>th</sup> September.
  - Participated in a road map workshop to establish center of excellence at IKG PTU at Academic Engineers and Architect Finland-TEK on 11<sup>th</sup> September.
  - A meeting was organized with the Indian Embassy at Finland on 13<sup>th</sup> September

### **Germany-01**

19. Visited Fraunhofer Center for Silicon Photovoltaics CSP, Halle (Saale) and hold a meeting with the Director for collaboration on 16<sup>th</sup> May 2014.

### **Spain**

20. Participate in International Thermal Spray Conference and Exposition (ITSC), 21-23<sup>rd</sup> May 2014, Barcelona. Hold a meeting with the representative on ASB industries Ohio on 22<sup>nd</sup> September 2014 during the conference.

### **Dubai**

21. Participated in World Engineering Education Forum (WEEF) at Dubai International Convention and Exhibition Centre, United Arab Emirates, Dubai, 3-6<sup>th</sup> December 2014.

**Annexure-E**  
**Expert Talks/Lectures Delivered**

1. Expert Lecture entitled, "Hot corrosion and degradation of metals," at Lala Lajpat Rai Institute of Engineering and Technology, Moga, under student chapter of ISTE on 30.03.2005.
2. Expert Talk entitled, "Thermal Spray: Technique and Applications," September 21, 2007 during National Conference on Advances in Materials and Manufacturing Technology (AMMT-2007), 21-22<sup>nd</sup> September 2007, PEC Chandigarh.
3. Key Note Address entitled, "Thermal Spray-A Technique to enhance Material Degradation Resistance," June 13, 2008 during National Conference on Latest Developments in Mechanical and Production Engineering (LDMPE), 13-14<sup>th</sup> June, 2008, RIMT, Mandi Gobindgarh, Punjab, India.
4. Expert Lecture entitled, "Multi Point Fuel Injection Systems," at Guru Gobind Singh College of Engineering and Technology, Talwandi Sabo on 26.09.2008.
5. Expert Lecture entitled, "Boiler Failures Introduction and some Practical Case Studies," at BBSBEC Fatehgarh Sahib (Pb.), Staff Development Programme on Thermal Spray Techniques and their Applications in Surface Engineering, June 22 to July 3, 2009.
6. Expert Lecture entitled, "Environmental Degradation of Metals," at BBSBEC Fatehgarh Sahib (Pb.), Staff Development Programme on Thermal Spray Techniques and their Applications in Surface Engineering, June 22 to July 3, 2009.
7. Expert Lecture entitled, "Engineering: Definition and Scope," at Guru Ramdas Institute of Engineering and Technology, Bhuchho Mandi (Bathinda) on 15.09.2009.
8. Expert Talk entitled, "Scope and Research Potential: Pulverised Coal Burner Nozzles (A Survey of Coal Fired Power Plants)," January 21, 2010 during National Conference on Innovative Developments for Engineering Applications (IDEA-2010), 21-22<sup>nd</sup> January 2010 at Bhai Gurdas Institute of Engineering and Technology (BGIET), Sangrur.
9. Expert Talk entitled, "Research Potential: Pulverised Coal Burner Feeders," National Conference on Smart, Electronic and Engineering Materials (SEEM'10), 5-6<sup>th</sup> March 2010, Baba Farid College of Engineering and Technology (BFCET), Deon (Bathinda)
10. Invited Talk entitled, "Future Potential of Friction stir welding," National Conf., "Advancements in Mechanical and Energy Environment, 6-7<sup>th</sup> January 2012, SLIET, Longowal (Pb.).
11. Expert Lecture entitled, "Energy Generation Systems, Risk of Tube Failures and Thermal Spray Coatings," Faculty Development Program, CEC Gharuan (Pb.) on 18.05.2012.
12. Expert Lecture entitled, "Innovation & Invention for *Development and Sustained Growth*," *Punjabi University Patiala* on 21.05.2012.
13. Expert Lecture entitled, "Quality Assurance in Technical Education in India," *Punjabi University Patiala* on 21.05.2012.
14. Expert Lecture entitled, "Energy Generation Systems and Boiler Tube Failures," at SUS CET Tangori (Pb.) on 29.05.2012.
15. Expert Lecture entitled, "State of Art Thermal Spray Coatings: Failures of Boiler Components," at MIMIT, Malout (Pb.) on 09.07.2012.
16. Expert Lecture entitled, "Boiler Tube Failures and Nano Structured Coatings, some research experiences," June 04, 2013 during FDP under TEQIP entitled, "Advanced and Micro Manufacturing," 3-7<sup>th</sup> June 2013, PEC Chandigarh.

17. Expert lecture entitled, "Erosion-Corrosion Problems and Possible Solutions: Some Practical Case Studies in Coal Based Thermal Power Plants," FDP under TEQIP at GNDEC Ludhiana on 21.06.2013.
18. Expert lecture entitled, "Technical Education Scenario in India: Quality Assurance- A Key Issue," December 06, 2013 during FDP under TEQIP, 2-6<sup>th</sup> December 2013, GZS PTU Campus, Bathinda on 06.12.2013.
19. Invited Talk, "Sustainable Development- A realistic Approach for Growth," Punjab Science Congress, "Science and Technology for Sustainable Growth," 14-16<sup>th</sup> February 2014, PTU Jalandhar (Pb.).
20. Expert Lecture entitled, "Biomaterials and Hydroxyapatite Coating: A Novel Technology," FDP under TEQIP, PEC Chandigarh on 05.06.2014.
21. Expert Lecture entitled, "History and Scope of Biomaterials and Hydroxyapatite Coatings," Faculty Development Program, BMS CET, Muktsar (Pb.) on 10.06.2014.
22. Expert lecture entitled, "Biomaterials and Hydroxyapatite Coating- Bioimplant Sustainability," FDP under TEQIP, BCET, Gurdaspur on 26.06.2014.
23. Expert lecture entitled, "Hydroxyapatite Coated Bio-materials- A state of art Technology for Implant Sustainability," FDP under TEQIP, GNDEC Ludhiana on 01.08.2014.
24. Expert lecture entitled, "Hydroxyapatite Coating for Bioimplant Sustainability," FDP under TEQIP, GZS PTU Campus, Bathinda on 28.10.2014.
25. Invited talk, "Investigation of In-Vitro Corrosion Behavior of Plasma Sprayed Hydroxyapatite and Hydroxyapatite-Calcium Phosphate Coatings," National Conference, "Mechanical Engineering," 7-8<sup>th</sup> November 2014, Panjab University, SSG Regional Centre, Hoshiarpur (Pb.).
26. **Expert talk, "India: An Emerging Destination for Technical Education," International Conference of World Engineering Education Forum (WEEF),"Engineering Education for a Global Community" 3-6<sup>th</sup> December 2014, Dubai International Convention and Exhibition Centre, United Arab Emirates, Dubai.**
27. Expert talk, "Boiler Tube Failures: Practical Experiences and Remedial Measures," delivered on 19<sup>th</sup> February during TEQIP-II Sponsored National Conf., "Latest Developments in Materials, Manufacturing and Quality Control (MMQC-15), GZS Campus CET, (Constituent College of MRS STU) Bathinda (Pb.) 19-20<sup>th</sup> February 2015.
28. Expert talk, "Coal Fired Boiler Tube Failures: Case Histories and Research Experiences," delivered on 20<sup>th</sup> March during 2<sup>nd</sup> National Conf., "Recent Trends in Mechanical Engineering (RTME-2015), BCET, Gurdaspur (Pb.) 20-21<sup>st</sup> March 2015.
29. **Expert talk, "High Temperature Corrosion Behaviour of Plasma Spray Coatings on Boiler Tube Steels," delivered on 30<sup>th</sup> April 2015 at University of Windsor, Windsor (Canada).**
30. Expert talk, "Technical Education in India (Scenario and Quality Assurance)," delivered on 9<sup>th</sup> July 2015, during one week FDP at Punjab University SSGRC Hoshiarpur (Pb. ).
31. Expert talk, "Role of Plasma Spray Coatings to Combat Boiler Tube Failures," delivered on 10<sup>th</sup> July 2015, during PTU sponsored FDP at Ferozpur College of Engineering and Technology (Pb.).
32. Expert talk, "Engineering Education in India: Scenario and Quality Perspectives," delivered on 1<sup>st</sup> October 2015, during Short Terms Course on "Engineering Today," at Yadvindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab.
33. Sharing, "large scale implementation of UHVPE at IKG PTU," January 08, 2016 during the inaugural session of 5<sup>th</sup> International Conference, "Human Values in Higher Education," at Atmiya Group of Institutions Rajkot (Gujarat) from 8-10<sup>th</sup> January 2016.

34. Chairperson for Panel discussion, "The Role and Expectation of Industry in shaping Engineering Education" on 10<sup>th</sup> January 2016 during 45<sup>th</sup> ISTE Annual National Convention & International Conference on "Challenges and Opportunities in Technical Education in the era of Sustainable Development," 9-11th January, 2016 at H.V.P. Mandal's College of Engineering and Technology, Amravati (Maharashtra).
35. Expert talk, "Boiler Component Failures: Causes and Identification," delivered on 24<sup>th</sup> February during one day workshop, "Thermal Spray Technology," organized by Society of Materials and Mechanical Engineers (SOMME) at Guru Nanak Dev Thermal Power Plant Bathinda (Pb.) on 24.02.2016.
36. Expert talk, "Improving Solid Particle Erosion Resistance of Pulverized Coal Burner Nozzle with Carbide-based Hardface Overlays," delivered on 25<sup>th</sup> February during International Conference "Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME'16)," at Baba Farid College of Engineering and Technology, Bathinda (Pb.), 25-27<sup>th</sup> February 2016.
37. Key note address, "BIOIMPLANT INTERFACE: Improving bio materials and tissue growth rate," at CGC Landran during FDP sponsored by PTU on 01.03.2016.
38. Expert talk, "Innovation and Invention: An Eco System for Sustainable Development," on 3<sup>rd</sup> June 2016 during International Conference on "Sciences, Engineering and Technical Innovations," 3-4<sup>th</sup> June, 2016 at CT Institute of Technology, Shahpur, Jalandhar (Punjab).
39. Expert talk, "Causes and Remedies for Boiler Component Failures," delivered on 29<sup>th</sup> June during one day workshop, "Corrosive Failure Remedies for High Temperature Component," organized by Society of Materials and Mechanical Engineers (SOMME) at CII Chandigarh (Pb.) on 29.06.2016.
40. Keynote Speaker, "Carbide-based Hardface Overlays: An Interface for Improving Erosion Resistance," delivered on 24<sup>th</sup> June during 3<sup>rd</sup> National Conf., "Recent Trends in Mechanical Engineering (RTME-2016), BCET, Gurdaspur (Pb.), 24-25<sup>th</sup> June 2016.
41. Expert talk, "Need and Significance of Faculty Development Programme," delivered on 25<sup>th</sup> November 2016, during Short Terms Course on "Engineering Today," at Yadvindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab.
42. **Plenary Talk, "Plasma Spray Coatings with Nano Structured Materials," Presented on 7<sup>th</sup> August 2017, during ICANM 2017: International Conference & Exhibition on Advanced & Nano Materials held at Four Points by Sheraton Toronto Airport, Toronto Canada, 7-9<sup>th</sup> August 2017.**
43. **Plenary Talk, "Engineering Nanostructured Thermal Spray Coatings for High Temperature Corrosion and Erosion Applications," November 02, 2017 during International Conference, "Advancements & Futuristic Trends in Mechanical & Materials Engineering," held at Shahid Udham Singh College of Engineering and Technology (SUS CET), Tangori, Mohali (Punjab), India, 2-4<sup>th</sup>, November 2017.**
44. Expert lecture entitled, "Coal Fired Boilers: Basics and Component Failures," delivered on 18<sup>th</sup> December 2017, AICTE Sponsored FDP, "Waste Management by Additive Manufacturing," from 11-23 December 2017 at GNDEC Ludhiana (Punjab).
45. Expert Talk entitled, "Coal Fired Boilers: Understanding the Components Failure Mechanism," delivered on 15<sup>th</sup> March 2018, FDP under TEQIP-III, "Micro Fabrication and Hybrid Machining," from 12-16 March 2018 at, PEC University, Chandigarh.
46. Expert Talk, "*Interactive*: Coal Fired Energy Plants and Breakdowns," delivered on 16<sup>th</sup> March 2018 at Baddi University, Baddi (HP)
47. Expert Talk entitled, "Coal Power Plant Experiences: Materials and Failure Investigations," delivered on 25<sup>th</sup> June 2018, ISTE-AICTE sponsored FDP, "Recent Advances in Materials, Manufacturing and Safety," from 25-30 June 2018 organized by Department of Mechanical Engineering, Giani Zail Singh Campus College of Engineering and Technology, MRSPTU, Bathinda (Pb.).

48. **Plenary Talk**, “Multi-Walled CNT Reinforcement to Thermal Spray coatings, November 15, 2018 during International Conference “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at Panjab University SSG Regional Center (PUSSGRC), Hoshiarpur (Punjab), India, 15-17<sup>th</sup>, November 2018.
49. Expert talk, “Indian Higher Education: Sustainability and Quality Reforms,” delivered on 7<sup>th</sup> January 2019, during Short Terms Course on “Engineering Today,” from 7-11 January 2019 at Yadindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab.
50. Expert talk, “A Case Study: Choice Based Credit System (CBCS) as Implementation at IKG PTU,” delivered on 15<sup>th</sup> March 2019, during Short Terms Course on “Choice Based Credit System,” from 11-15 March 2019 at National Institute of Technical Teacher Training and Research (NITTTR) Chandigarh, India.
51. Expert talk, “Material Failures in Coal Fired Boilers: Characterization, Causes and Remedies,” delivered on 18<sup>th</sup> June 2019, Short Terms Course on “Material Characterization Techniques,” from 17-21<sup>st</sup> June 2019 at Dr. B R Ambedkar National Institute of Technology (NIT) Jalandhar, Punjab.
52. Expert talk, “Thermal Spray Technology: An Overview,” delivered on 30<sup>th</sup> October 2019, Short Terms Course on “Manufacturing 4.0,” from 28<sup>th</sup> October to 1<sup>st</sup> November 2019 at PEC University of Technology Chandigarh, India.
53. Keynote, “Biodegradable Magnesium (Mg) Implants: Challenges and Opportunities,” 5<sup>th</sup> December 2019 during International Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at IIT Ropar (Punjab), India, 5-7<sup>th</sup>, December 2019.
54. Expert Talk entitled, “Thermal Spraying: An Overview and Applications,” delivered on 10<sup>th</sup> December 2019, FDP, “Surface Engineering and Materials Characterisation,” from 09-13 December 2019 organized by IKG Punjab Technical University, Jalandhar (Pb.).
55. Expert Talk entitled, “Indian Higher Education: Overview and Quality Concerns,” delivered on 29<sup>th</sup> December 2019, National Level FDP, “Innovations in Teaching, Learning and Research,” from 24-30 December 2019 organized by Doaba College, Jalandhar (Pb.).
56. Interactive Session entitled, “Reshaping Teaching & Learning: Use of Online Tools and Technologies,” on May 23, 2020, One Day Workshop, “Online Teaching & Effective Learning: Bridging the Gap,” organized by SOMME, Bathinda (Pb.).
57. Expert Talk entitled, “Building Research Culture: A Pathway to Excellence in Research,” delivered on June 01, 2020, AICTE and ISTE approved one week online FDP, “Enhancing Research Capabilities,” from June 1-5, 2020 organized by SOMME, Bathinda (Pb.).
58. Expert Talk entitled, “Research Indices: Visualise Research and Authorship Impact,” delivered on June 05, 2020, AICTE and ISTE approved one week online FDP, “Enhancing Research Capabilities,” from June 1-5, 2020 organized by SOMME, Bathinda (Pb.).
59. Panellist for Panel Discussion entitled, “Challenges for Quality Research,” on June 05, 2020, AICTE and ISTE approved one week online FDP, “Enhancing Research Capabilities,” June 1-5, 2020 organized by SOMME, Bathinda (Pb.).
60. Expert Talk entitled, “Coatings and Surface Engineering: An Overview and Applications,” delivered on June 10, 2020, AICTE and ISTE approved one week online FDP, “Coatings and Surface Engineering: Addressing the Need of Industry,” from June 10-16, 2020 organized by SOMME, Bathinda (Pb.).
61. Panellist for “Industry & Academia Panel Discussion,” on December 12, 2020, Under TEQIP Industry and Academia Conclave, “The Future of Engineers: Opportunities and Challenges Today and Tomorrow,”

- December 10-12, 2020 organized by Mechanical Engineering Department, Punjab Engineering College (PEC-Deemed to be University), Chandigarh.
62. Plenary Speaker, “Surface Engineering: Some Research Activities,” on December 19, 2020 during online International Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at MRS PTU Bathinda (Punjab), India, December 19-20, 2020.
  63. Guest of Honour Address, November 23, 2020 during Inaugural Ceremony of AICTE and ISTE approved one week online Induction/Refresher Programme, “Data Science Analytical and Visualisation,” November 23-28, 2020 organized by Shri Shankaracharya Technical Campus Bhilai (Chhattisgarh).
  64. Guest of Honour Address, December 14, 2020 during Inaugural Ceremony of 6 days AICTE-ISTE Sponsored online Refresher Programme, “Developing Secure IoT Applications,” December 14-19, 2020 organized by Shah and Anchor Kutchhi Engineering College, Mumbai (Maharashtra).
  65. Valedictory Address, during the Valedictory function of International Conference on Contemporary Issues in Accounting, Finance and Banking (Punjab Commerce & Management Association & Khalsa College For Women in Association with Institute of Company Secretaries of India, *Patiala Chapter*), 26-27<sup>th</sup> December 2020.
  66. Expert Talk entitled, “Knowing Surface Degradation and Protective Techniques,” delivered on January 25, 2021, AICTE approved one-week online STTP, “Recent Advancements in Materials and Manufacturing,” from February 08-13, 2021 organized by Deptt. of Mech. Engg., MRS PTU Bathinda (Pb.).
  67. Expert Talk entitled, “What is Quality Research? Creating Research Culture,” delivered on February 8, 2021, AICTE approved one-week online STTP, “Enhancing Research Capabilities and Technical Education,” from February 08-13, 2021 organized by Deptt. of Mech. Engg., MRS PTU Bathinda (Pb.).
  68. Expert Talk entitled, “Research Indices: Visualise Research and Authorship Impact,” delivered on August 23, 2021, AICTE approved one-week online STTP, “Research Methodology,” from August 23-27, 2021 organized by Deptt. of Mech. Engg., MRS PTU Bathinda (Pb.).
  69. Keynote, “Technological Aspects of Dissimilar Metal Weldments,” 9<sup>th</sup> December 2021 during International Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at IIT Ropar (Punjab), India, 9-11<sup>th</sup>, December 2021.
  70. Expert Talk entitled, “Research Indices: Visualise Research and Authorship Impact,” delivered online September 02, 2021, AICTE FDP 2021.
  71. Expert Talk entitled, “Faculty Induction Program: Importance and Significance,” delivered online February 08, 2021, Faculty Orientation Program organized by GNDU Amritsar (Pb.)-2021.
  72. Expert Lecture, “NEP 2020: Governance and Leadership,” August 19, 2021, Five Days Webinar Series, “Implementation of National Education Policy 2020,” August 18-24, 2021, organized by IKG PTU Jalandhar in collaboration with Shiksha Sanskriti Utthan Nyas, New Delhi.
  73. Expert Talk entitled, “Coatings and Surface Engineering: An Overview and Applications,” delivered on January 11, 2022, AICTE and ISTE approved online Induction/Orientation Program, “Advances in Materials and Manufacturing Technologies,” January 11-17, 2022 organized by MIMIT Malout (Pb.).
  74. Expert Talk entitled, “Coatings and Surface Engineering: An Overview and Applications,” delivered on February 16, 2022, AICTE-ISTE Sponsored one-week online Induction/Refresher Program, “Surface Engineering and Coatings: Fundamental, Practice and Applications,” February 16-22, 2022 organized by IKG PTU Jalandhar (Pb.).

75. Plenary Speaker, “NEP 2020: Reforms in Indian Education System,” on February 25, 2022, One day Workshop, “National Education Policy 2020: Reforms in Indian Education System,” held at Gulzar Group of Institutions, Khanna, Ludhiana (Punjab).
76. Plenary Speaker, “NEP 2020-Role of Technical Institutions: Governness and Leadership,” ISTE Section Faculty Convention and National Seminar on, “Role of Technical Education Institution under New National Education Policy” held at NIT Jalandhar (Punjab), September 30, 2022.
77. Expert Talk entitled, “Embedding Research Culture for Inclusive Excellence,” delivered on January 29, 2025, Guru-Dakshata Faculty Induction Program from January 08, 2025 to February 04, 2025, organized by Malaviya Mission Teacher Training Centre Punjabi University Patiala (Pb.).
78. Expert Talk entitled, “Indices Shaping Academia: Visualise Research and Authorship Impact” delivered on January 29, 2025, Guru-Dakshata Faculty Induction Program from January 08, 2025 to February 04, 2025, organized by Malaviya Mission Teacher Training Centre Punjabi University Patiala (Pb.).

**Annexure-F**  
**Conferences/Workshops attended**

1. Attended National Seminar on, “Advances in Material and Processing,” held at **IIT, Roorkee, India** on 9-10<sup>th</sup> November 2001.
2. Attended International Conference on, “Advances in Materials and Materials Processing,” held at **IIT, Kharagpur, India** on 1-3<sup>rd</sup> February 2002.
3. Attended 5<sup>th</sup> Punjab Science Congress held at **TIET Patiala, India** on 7-9<sup>th</sup> February 2002.
4. Attended 6<sup>th</sup> Punjab Science Congress held at **SLIET, Longowal, India** on 7-9<sup>th</sup> Feb. 2003.
5. Attended Workshop, “Enhancing of Intellectual Property in Technical Institutions,” 4<sup>th</sup> March, 2003 at Indian Institute of Technology, Roorkee
6. **Attended International Symposium, “Corrosion Science in the 21<sup>st</sup> Century,” held at Manchester (UK) on 6-11<sup>th</sup> July, 2003.**
7. Attended International Conference, “Advances in Materials and Processes for Industrial Applications,” held at **Pune, India** on 25-27<sup>th</sup> September, 2003.
8. Attended National Conference., “Recent Developments in Mechanical Engineering,” held at **TIET, Patiala, INDIA**, 31 October-01 November 2003.
9. Attended 8<sup>th</sup> Punjab Science Congress held at **Punjabi University, Patiala, India** on 7-9<sup>th</sup> February 2005.
10. Attended 14<sup>th</sup> ISME International Conference, “Mechanical Engineering in Knowledge Age,” held at **DCE, New Delhi, India**, 12-14<sup>th</sup> December, 2005.
11. **Attended International Thermal Spray Conference and Exposition (ITSC), 15-18<sup>th</sup> May 2006, Seattle, Washington (USA).**
12. Attended National Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” held at **GZS CET Bathinda, Punjab India**, 13-14<sup>th</sup> October, 2006.
13. Chaired session and attended International Conference, “Advances in Mechanical Engineering,” held at **Baba Banda Singh Engineering College, Fatehgarh Sahib, Punjab, India**, 1-3<sup>rd</sup> December, 2006.
14. Attended 36<sup>th</sup> Annual Convention and National Seminar, “Quality, Sustainability and Social Responsibility: Interface in Technical Education in the Context of Globalization,” held at **BIT Satyamangalam, Erode, Tamil Nadu, India**, 14-16<sup>th</sup> December, 2006.
15. **Attended International Materials and AustCeram Conference, held at Sydney, Australia, 4-6<sup>th</sup> July, 2007.**
16. Attended National Conference, “Advances in Materials and Manufacturing Technology (AMMT-2007), 21-22<sup>nd</sup> September, 2007, PEC, Chandigarh, India.
17. Attended National Conference, “Emerging Trends in Engineering and Information Technology (ETEIT’09),” 6-7<sup>th</sup> November, 2009, held at GTBKIET, Chhapianwali, (Malout), Punjab, India.
18. Attended Workshop, “Patent Awareness,” 11<sup>th</sup> December, 2009, held at Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab, India.
19. Attended National Conference, “Innovative Developments for Engineering Applications (IDEA-2010),” 21-22<sup>nd</sup> January 2010 at Bhai Gurdas Institute of Engineering and Technology (BGIET), Sangrur, Punjab, India.
20. Attended National Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” 19-20<sup>th</sup> February, 2010, held at Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo (Bathinda), Punjab, India.
21. Attended National Conference, “Smart, Electronic and Engineering Materials (SEEM’10),” 5-6<sup>th</sup> March 2010 at Baba Farid College of Engineering and Technology (BFCET), Deon (Bathinda), Punjab, India.
22. Attended National Conference, “Integrating Human Values in Technical Education,” 11-12<sup>th</sup> December, 2010, Organized by PTU at NIT Jalandhar.

23. Attended International Conference, “IV<sup>th</sup> Global Meeting of Association of Universities,” 11-12<sup>th</sup> April, 2011, organized by Association of Indian Universities (AIU) New Delhi held at Hotel Ashok, Chanakyapuri, New Delhi (India).
24. **Attended International Conference, “9<sup>th</sup> International Conference on Advances and Trends in Engineering Materials and Their Applications ( AES-ATEMA’2011), held at Montreal, Canada, 01-5<sup>th</sup> August 2011.**
25. Attended National Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” 7-8<sup>th</sup> October, 2011, held at Punjab Technical University, Kapurthala, Punjab, India.
26. **Attended International Conference, “Global Leadership in Engineering Education – Global Engineering Deans Council,” 20-22, October, 2011, held at Peaking University, Beijing, China.**
27. Attended National Conference, “Advancements in Mechanical Engineering and Energy Environment,” 6-7 January, 2012, held at SLIET Longowal, Punjab, India.
28. Attended, “1<sup>st</sup> World Summit on Accreditation (WOSA 2012), Achieving Excellence Through Accreditation,” organized by National Board of Accreditation (NBA), 25-28<sup>th</sup> March, 2012, held at Taj Hotel, New Delhi
29. Attended Workshop, “Adventures in Academic Leadership,” conducted by Dr. James L. Melsa, Dean Emeritus College of Engineering, Iowa State University, USA and Dr. Walt Gmelch, Dean and Professor, College of Education, University of San Francisco, USA, 3-4 May, 2012, held at LPU, Phagwara, Punjab, India.
30. **Attended International Conference, “2012 ASEE Inaugural International Forum,” 9-10 June, 2012 held at San Antonio, Texas, USA.**
31. Attended Workshop, “Canadian Best Practices on Skill Development,” 10 September 2012, held at CII, Chandigarh, India.
32. Attended International conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME’12),” October 5-7, 2012 held at Punjab Technical University Jalandhar-Kapurthala Highway, Kapurthala.
33. **Attended International Thermal Spray Conference and Exposition (ITSC), 13-15<sup>th</sup> May 2013, Busan, South Korea.**
34. Attended and delivered invited lecture during National Congress, “Science and Technology,” 30-31 May, 2013, held at DAV College Jalandhar, Pb., India.
35. Attended four days Webinar cum Training workshop, “Outcome Based Accreditation,” July 25-28, 2013 at IKG Punjab Technical University, Kapurthala (Punjab).
36. Attended International Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” 3-6<sup>th</sup> October, 2013, held at Punjab Technical University, Kapurthala, Punjab, India.
37. **Attended International Conference, “Online Digital Education and Transformed Faculty Roles – Global Engineering Deans Council,” 20-22, October, 2013, held at Chicago, USA.**
38. Attended National Conference of Vice-Chancellors, “Swami Vivekananda on Education-A Vision for National Resurgence,” November 16-17, 2013 held at New Delhi Convention Center, near Jantar-Mantar, New Delhi.
39. Attended 3<sup>rd</sup> International conference, “Human Values in Higher Education,” 28 February to 2<sup>nd</sup> March 2014 at PTU Jalandhar (Pb.).
40. Attended 17<sup>th</sup> Punjab Sc. Congress, 14-16<sup>th</sup> Feb. 2014, PTU Jalandhar.
41. **Attended International Thermal Spray Conference and Exposition (ITSC), 21-23<sup>rd</sup> May 2014, Barcelona, Spain.**
42. Attended one day Thermal Spray Workshop, PTU Jalandhar (Pb.) on 15.10.2014.
43. Attended International Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” 16-18<sup>th</sup> October, 2014, held at Punjab Technical University, Kapurthala, Punjab, India.

44. **Attended 3<sup>rd</sup> Biennial Conference of the Combined Australian Materials Societies (CAMS2014), 26-28<sup>th</sup> November, 2014 held at Charles Perkins Centre, University of Sydney, Sydney, Australia.**
45. **Attended International Conference, “World Engg. Education Forum (WEEF),” 3-6<sup>th</sup> December 2014, Dubai International Convention and Exhibition Centre, United Arab Emirates, Dubai.**
46. **Attended International Thermal Spray Conference and Exposition (ITSC), 10-14<sup>th</sup> May 2015, Long Beach, USA.**
47. Attended International Conference, “Human Values in Higher Education,” 8-10<sup>th</sup> January 2016 at Atmiya Group of Institutions, Rajkot (Gujarat) for one day i.e. on 8<sup>th</sup> January 2016.
48. Attended 45<sup>th</sup> ISTE National Annual Convention and International Conference, “Challenges & Opportunities in Technical Education in the era of Sustainable Development,” 9-11<sup>th</sup> January, 2016 at H.V.P. Mandal’s College of Engineering and Technology, Amravati (Maharashtra).
49. Attended one day workshop, “Thermal Spray Technology,” organized by Society of Materials and Mechanical Engineers (SOMME) at Guru Nanak Dev Thermal Power Plant Bathinda (Pb.) on 24.02.2016.
50. Chaired Technical Session and attended International Conference, “Advancements & Futuristic Trends in Mechanical & Materials Engineering,” 25-27<sup>th</sup> February, 2016, held at Baba Farid College of Engineering and Technology Bathinda, Punjab, India.
51. Attended, 3<sup>rd</sup> World Summit on Accreditation (WOSA 2016), Quality Assurance Through Outcome Based Accreditation,” organized by National Board of Accreditation (NBA), 18-20<sup>th</sup> March, 2016, held at Leela Ambience Hotel, Gurgaon (Delhi NCR)
52. Chaired technical session during 3<sup>rd</sup> DAV National Congress, “Science, Technology, Engineering, Humanities and Management (STEHM-2016),” held at **DAV Institute of Engineering and Technology, Jalandhar, Punjab, India, 20-21<sup>st</sup> May, 2016.**
53. Attended one day workshop, “Corrosive Failure Remedies for High Temperature Component,” organized by Society of Materials and Mechanical Engineers (SOMME) at CII Chandigarh (Pb.) on 29.06.2016.
54. **Attended International Conference and Evaluated Posters Presented, “6<sup>th</sup> International Conference and Exhibition on Materials Science and Engineering,” 12-14<sup>th</sup> September 2016, Atlanta, USA.**
55. Attended one day NBA awareness workshop, “Outcome Based Education and Accreditation for Engineering Colleges Affiliated to IKG PTU Jalandhar and MRS PTU Bathinda,” at NITTR, Chandigarh on 21.01.2017.
56. Attended 46<sup>th</sup> ISTE National Annual Convention and International Conference, “Intelligent Technologies for Better Tomorrow,” 10-12<sup>th</sup> February, 2017 at Gulzar Group of Institutes, Khanna, Ludhiana (Punjab).
57. **Attended International Conference and Chaired Session, “ICANM2017: International Conference and Exhibition on Advanced & Nano Materials” 07-09<sup>th</sup> August 2017, held at Four Points by Sheraton Toronto Airport, Toronto, Canada.**
58. Attended 47<sup>th</sup> ISTE National Annual Convention and International Conference, “Transform Student Engineers to Practicing Professionals,” 27-29<sup>th</sup> January, 2018 at Saintgits College of Engineering, Kottukulam Hills, Kottayam, (Kerala)-686532.
59. Attended “48<sup>th</sup> ISTE National Annual Faculty Convention,” 19-20<sup>th</sup> March, 2019 at Visvesvaraya Technological University (VTU), Jnana Sangama, Belagavi (Karnataka)-590018.
60. Attended “49<sup>th</sup> ISTE National Annual Faculty Convention,” 29-30<sup>th</sup> November, 2019 at Siksha ‘O’ Anusandhan (Deemed to be University) Campus, Bhubaneswar (Orissa)-751003.
61. Attended one day online workshop entitled, “Online Teaching and Effective Learning: Bridging the Gap,” on May 23, 2020 organized by SOMME at Bathinda (Pb.).

**Annexure-G**  
**Short Terms Schools/Courses attended**

S. No.	Title of the school/course	Held at	Duration
01	Direct Energy Conversion Devices	Dept. of Mech. and Ind. Engg., UOR, Roorkee	21.06.94 to 05.07.94
02	Personal Computer and Applications	GZS College of Engg. and Tech., Bathinda (Pb.)	31.05.95 to 14.06.95
03	Basic Concepts of Cryogenic Technology	GND Engg. College, Ludhiana (Pb.)	17.10.96 to 18.10.96
04	Generic Skills in Technical Education	Dept. of Ec. and Comp. Engg., UOR, Roorkee	19.06.97 to 03.07.97
05	Object Oriented Programming and C++	MACT Bhopal (M.P.)	22.12.97 to 03.01.98
06	Solar Energy Utilization	Dept. of Mech. and Ind. Engg., UOR, Roorkee	11.06.98 to 25.06.98
07	Neural Networking and Fuzzy Logic Systems Using C++	GZS College of Engg. and Tech., Bathinda (Pb.)	28.12.98 to 08.01.99
08	Educational Technology for Excellence in Teaching	QIP Centre, UOR, Roorkee	20.06.2K to 04.07.2K
09	Advanced Welding and Weld Testing Techniques	Dept. of Mech. and Ind. Engg., UOR, Roorkee	13.06.01 to 27.06.01
10	Use of CNG in IC Engines	Dept. of Mech. and Ind. Engg., IIT, Roorkee	30.06.02 to 05.07.02
11	High Temperature Corrosion of Metals and Alloys	Dept. of Met. and Mat. Engg., IIT, Roorkee	07.07.02 to 12.07.02
12	Modelling and Reduction of Large Scale Systems	Dept. of Elect. Engg., IIT, Roorkee	21.06.04 to 25.06.04
13	Corrosion and Its Protection	Dept. of Met. and Mat. Engg., IIT, Roorkee	28.06.04 to 02.07.04
14	Teacher Orientation Program, "Universal Human Values and Professional Ethics"	Organized by PTU at IIT, Kanpur	15.12.10 to 21.12.10
15	Training in Excellence	Organized by PTU Kapurthala	09.09.14 to 18.09.14