CURRICULUM VITAE

PERSONAL INFORMATION

Name

Prakriti Kumar Ghosh, Ph.D. (Met. Engg.), FIE, FIIW, MNASI, AvH Fellow (Germany)

Present Assignments

- Chairman visiting expert committee, National Board of Accreditation (NBA), New Delhi
- Editor Spinger Nature Publication, Trans. IIM

Past Positions Held

i. **Visiting Professor**, Indian Institute of Technology Tirupati (2021-2022).
ii. **Vice-President**, Siddharth Group of Engineering Institutions, Puttur, AP, India, (From September 2017-September 2020).
iii. **Adjunct Professor**, Indian Institute of Technology Tirupati
iv. **Emeritus Professor** (Fellow), (From May-3rd September 2017).
v. **Officiating Director** (From 1 Nov. 2016 to 9 January 2017) & **Deputy Director,** Indian Institute of Technology Roorkee (From June 2016 to April 2017).
vi. **Dean (Finance & Planning),** Indian Institute of Technology Roorkee (From Jan 2013 to May 2016)
vii. **Head of Department** of Metallurgical & Materials Engineering (From Jan 2010 to Dec 2012)
viii. **MHRD-IPR Chair Professor**, IIT Roorkee (From 2012 to August 2017)
ix. **Senior Professor (HAG)**, Department of Metallurgical and Materials Engineering, From 2011.
x. **Professor**, Department of Metallurgical and Materials Engineering, IIT Roorkee, (From 2001)

Last Pay Scale (Basic)

Higher Academic Grade (HAG) scale from 2011 in IIT Roorkee

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E-Mail	prakgfmt@gmail.com
Date of Birth	8th April 1952
Nationality	Indian
Marital Status	Married (1 Child)

EDUCATIONAL QUALIFICATION

1990	**Alexander von Humboldt Postdoctoral Fellow**, TU Berlin, Germany
1986	**Ph.D.** in Metallurgical Engineering Indian Institute of Technology Roorkee, erstwhile University of Roorkee (UOR), India Dissertation: Mixing Characteristics and mechanical Properties of Cast A(Mg)-Al_2O_3 Particulate Composite
1981	**Masters of Engineering** in Industrial Metallurgy **(M.E.) Hons.** securing 82.44 %, Indian Institute of Technology Roorkee, erstwhile UOR, India
1979	**Diploma in Metallurgical Engineering,** with **1st Class,** Indian Institute of Metals.
1971	Bachelor of Science **(B.Sc.)** in Physics, Chem. & Maths with **"Distinction"**, University of Burdwan, India.

CONTRIBUTION AS EDUCATOR IN PROFESSIONAL MANAGEMENT OF EDUCATION :

- Development and implementation of **"Industry Accademia Partnership (IAP)"** programme to UG education in engineering at Siddharth Institutions, Puttur, AP from January 2018. Currently more than **40 MSME industries** are participating as partner in this programme to cater innovative efforts of more than **400 students** they are integrated through their internship and project work. White paper for the Strategic planning of the programme (ANNEXURE-II) is protected under **Copy right**.
  The IAP programme has been communicated to **Ministry of Education in 2019** for consideration under the National Perspective of education policy on development of skilled/trained human resources and entrepreneur in HEIs of Technical Education.
- Structuring and implementation of **"Smart Teaching and Learning"** system from 2018 in UG education in engineering with technical support from McGrawhill. It is a platform for the Teachers and Students to prepare them by knowing **"What you don't know"**. It is a fully integrated cyclic activity of Class room ⇨ Interactive class room ⇨ Midterm test.
- **Advisor/Mentor/Chairman visiting expert** to support HEIs of Engineering in organizing the **Academic and Administrative activities** of UG & PG studies according to the Washington Accord in order to maintain the stipulated standards required by **National Board of Accreditation (NBA)** for accrediting engineering degree programs.

HONOURS AND AWARDS

2022	**Editor Transaction Indian Institute of Metals,** Springer Nature Publications Pvt. Ltd.
2020	**Distinguished Scientist Award** in **"International Scientist Awards on Engineering, Science and Medicine",** VDGOOD Professinal Association.
2014-2017	**President, Alexander von Humboldt House, Uttarakhand, INDIA**
2013	**Chairman, Road map implementation committee, MHRD-IPR Chair**
2012	**Member Editorial Board,** Powder Metallurgy and Mining, USA, 2012
2010	**Member of Nomination Council** for the **"Infosys Prize of the year 2010-2013"** of the **"Infosys Science Foundation".**
2010	**Reviewer of "Casting Forming Welding"** Developing Suitable Pedagogical Methods for Various Classes, Intellectual Calibres and Research in e-Learning, **National Mission Project on Education through ICT, MHRD Govt. of India**.
2009	**Coordinator**, development of lecture note on a course **"Composite materials"** [Web and Video] under a **National Programme, NAPTEL, MHRD Govt. of India**.
From 2005-2007	Recipient of **Star Performer of the Year Award** of IIT Roorkee
From 2007	**Member Reviewers Board (Key Reader)**, Metallurgical & Materials Trans. (A), ASM, USA
2006	**2006 Steel Authority of India limited (SAIL) Gold Medal** for **best paper** (ferrous) of the year 2005, **"National Award"** of the Indian Institute of Metals
2005	**Earned a Position** in 8th edition of the well known **Marquis Who's Who in Science & Engineering**
2002	**ISCMS-Tata Steel Award** for **best paper** (ferrous) **of the year** 2000-2001, Indian Society for Construction Materials & Structures (ISCMS)
1998	**Binani Gold Medal** for **best paper** (non ferrous) of the year 1997, **"National Award"** of the Indian Institute of Metals
1994	**Best Paper of the Year Award** of the Steel Authority of India Limited
1990	**Fellowship Award of Alexander von Humboldt Foundation,** Germany
1985	**Best Paper Award** of the National Welding Seminar (NWS-85), The Indian Institute of Welding

OTHER PROFESSIONAL ENGAGEMENTS

IITR Appointments Held

From 2011-2012	**Coordinator IPR Professorial Chair,** IIT Roorkee.
From 2005-2011	**Coordinator,** Intellectual Property Rights Cell (IPR), IIT Roorkee.
From 2010	**Member Advisory Committee,** Technology incubation and entrepreneur development activity (TIEDA) centre of IIT Roorkee.
From 2007 - 2013	**Coordinator (Uttarakhand State),** Technopreneur Promotion Programme (TePP) Outreach Centre, Department of Scientific and Industrial Research (DSIR), Government of India, Office in IIT Roorkee.

Additional Professional Appointments Held	
From 2016	**Chairman Visiting Expert Team** of National Board of Accreditation, AICTE, New Delhi.
2013	Empanelled in the **"Directory of Experts"** of Bharat Heavy Electricals Limited in the field of Composite Materials and Welding Engineering.
2007 – Till to date	Member, **Reviewers Board (Key Reader)**, Metallurgical & Materials Trans. (A), ASM, USA
2005-2007	Member **expert panel** of Research and MODOROF projects allocation to the technical institutes/colleges, AICTE, New Delhi
2004-2006	Member, **Technical Advisory Panel** - Indian Welding Journal
2002-2009	**Managing Editor**, R&D Magazine of IIT Roorkee, "SCI-TECH"
From 2002	Member **expert panel** of National Board of Accreditation, AICTE, New Delhi [**Chairman Expert Team** From 2016]
From 2000	Member University bridge Engineering Group and Member **Task Force** Railway Bridge Development, Indian Institute of Technology Roorkee.
2005 - 2013	**Vice President**, Indian Society for Construction Materials & Structures
1996 - 1999	**Consultant/Advisor** of EICHER Tractors, Faridabad, India
1996 - 2003	Member **editorial board** "Indian Welding Journal", Calcutta
2000 - 2001	Member **Technology Development Group** for Rail Welding, Ministry of Railways, Government of India
2000 - 2001	Chairman of **Technical Commission for Arc Welding** of IIW concurrent with the International Institute of Welding
1993 - 1996	Member of the **"Judges Panel"** for the prestigious Modi Award and Fusion Award of the Indian Institute of Welding
TEACHING/RESEARCH EXPERIENCE	More than **46 years** [since 06.02.1974]
Subjects Taught	

- Innovation Management (Undergraduate level)
- Failure Investigation of Weld Joints (Postgraduate level)
- Failure Analysis engineering components (Postgraduate level)
- Design and Stress Analysis in Welded Structure (Postgraduate level)
- Composite Materials (Undergraduate & Postgraduate levels)
- Experimental Techniques in Materials Science (M.Phil. level)
- Corrosion engineering (Postgraduate level)
- Mechanical Metallurgy (Undergraduate level)
- Physical Metallurgy (Undergraduate level)
- Joining of materials (Undergraduate & Postgraduate level)
- Welding Metallurgy (Postgraduate level)
- Metal Forming (Postgraduate level)

Supervision of Thesis

- Supervised Postgraduate **(Master's) Theses** – 82 Nos. **(Appendix I)**
- Supervised **Ph.D. Theses** – 25 Nos. **(Appendix II)**

Development of New Courses

- Failure investigation of engineering components (Postgraduate level), 1984
- Composite materials (Undergraduate level), 2001
- Advanced Composites (Engg.) (Postgraduate level), 2002

Development of New Laboratory Facilities

- Establishment of "**Welding Research Laboratory**" (biggest in academic institute in India) in Department of Mechanical & Industrial Engineering, University of Roorkee, under Indo German Technical Co-operation Programme.
- Establishment of "**Advanced Joining of Materials Laboratory**" in Department of Metallurgical & Materials Engineering, IIT Roorkee.
- Establishment of "**Nano Filler Polymer Technology Laboratory**" in Department of Metallurgical & Materials Engineering, IIT Roorkee.
- Development of **"Concept Material Designing Laboratory"** in Department of Metallurgical & Materials Engineering, IIT Roorkee.

Execution of Major Research Projects

Executed **20 major National and International** (DST-DAAD ; DST-BMBF, Germany & EU Erasmus Mundus) Research Projects in Engineering **(Appendix III)**

Areas of Specialisation and Research/Interest

- Intellectual Property Management & Innovation Management
- Fatigue and Fracture mechanics.
- Failure analysis of Engineering Structure/Weld joint
- Synthesis & Characterization of Composite materials
- Nano polymer composite for advanced structural applications.
- Design of weld and welded structure.
- Adhesive/composite adhesive Joining of Metals and Polymers
- Surface Modification of Metals and Alloys by Ion Implantation
- Ceramic-metal brazing for high temperature application.
- Hard Surfacing of Steels for Abrasion Resistance.
- Electric Arc and Resistance Welding Including Pulsed current GMAW.
- Welding Metallurgy & Characterization of Weld Joint.
- Computer Aided welding
- Welding of metal Base Particulate Composite
- Microstructure refining by interruption in solidification through pulsed current weld deposition.

LEAD ROLE IN INSTITUTE ADMINISTRATION

- **Established** a professionally organized **"Intellectual Property Rights Cell"** in IIT Roorkee to actively deliver the following.

- To organize awareness programme and designing of **academic courses on IPR and Innovation management** for UG/PG students and scholars

- To educate/motivate scholars for **IP creation**
- Holding short term national courses on IPR and management
- Introducing a system for processing of disclosures on innovation and filing of patent
- Introducing a system for technology transfer and IP management

- Drafted **"Intellectual property rights policy"** of IIT Roorkee and introduced in practice from Sept. 2005.
- Drafted organizational structure, administrative norms and budgetary configuration of a proposal for establishment of **"Technology incubation and entrepreneur development activity (TIEDA)"** centre in IIT Roorkee. The centre has been established and put to functioning in the year 2010.
- Drafted **"Business incubation policy"** of IITR, introduced in practice from June 2010.
- Drafted **"Faculty entrepreneur policy"** of IITR, introduced in practice from June 2010.

POSTDOCTORAL FELLOWSHIPS

1991 - 1993 / 1995 / 1996 / 2001 / 2006 / 2007 / 2009 / 2013 / 2015 / 2018	**Alexander von Humboldt** Postdoctoral Fellowship Award (1990), Germany. **Several visits** from initiation followed by resumption of fellowship, re-invitation and alumni cooperation with TU Berlin, University of Applied Sciences FHTE Esslingen and TU Dresden, MPI, University of Stuttgart, Karlsruhe Institute of Technology (KIT).
1988 / 2013	DAAD Postdoctoral Fellowship & DAAD Visiting Professor, Germany

INTERNATIONAL COOPERATION/VISIT

2018	**Alexander von Humboldt Fellowship** under **Short visit** Programme, TU Dresden, MPI Stuttgart, and Karlsruhe Institute of Technology, Germany. **Purpose:** Delivering lectures in every institute, Discussions on ongoing research cooperation and formulation of further collaborative research with industrial interaction.
2016	As Director (Offg.), IIT Roorkee visited Iran in November 2016 as a **member of the delegation of IIT Directors** to discuss about the cooperation in academics and research. The team of delegation visited several universities of Iran.
2015	**Alexander von Humboldt Fellowship** under **Short visit** Programme, TU Dresden and MPI Stuttgart, Germany. **Purpose:** Discussions on ongoing research cooperation and formulation of further collaborative research with industrial interaction.
2014	**Consortium Meeting of the partners** of HEIP-LINK project on **"Promoting International Dimension of research in HEIs"** under the Erasmus Mundus Action 3 programme of EC, Collegium Maius, s. Bobrzyńskiego, Jagiellońska, Kraków, Poland **Purpose:** To attend the Consortium Meeting / International conference on "Cross Border Research cooperation, Supporting tools & Intellectual Property Management"
2014	**Internal Project Coordinating meeting** of HEIP-LINK project on

"Promoting International Dimension of research in HEIs" under the Erasmus Mundus Action 3 programme of EC, National University of Social Sciences & Humanities, Vietnam.
Purpose: To attend the Internal Project Coordinating Meeting / International Conference on "International Research Cooperation & Intellectual Property Management".

2013 **Visiting Professor** under **IIT-DAAD Master Sandwich Programme**, MPI Stuttgart, University of Stuttgart, Germany
Purpose: Mentoring of collaborative M.Tech. dissertation work.

2013 **Alexander von Humboldt Fellowship** under **Renewed Research** Programme, TU Dresden, Germany.
Purpose: Discussion on ongoing research cooperation and formulation of further collaborative research with industrial interaction.

2013 **Meeting of the partners** of HEIP-LINK project on **"Promoting International Dimension of research in HEIs"** under the Erasmus Mundus Action 3 programme of EC, University of the Free State, Bloemfontein , Cape Town, Republic of South Africa
Purpose: Kick-off meeting of the project partners from BRICS countries, & other six countries from Europe, Asia and South America.

2010 **South European IIW Congress, Invited** presentation of a research paper on advanced welding engineering, Sofia, Bulgaria.

2010 **Meeting of the partners from BRIC countries** and Europe of the IP-UniLink project on IP management under the Erasmus Mundus programme of EU, Kunming University of Science and Technology, Kunming, China.
Purpose: To discuss the report on the survey and analysis of the preparedness of HEIs on IP management.

2009 **Alexander von Humboldt Fellowship** under **Renewed Research** Programme, TU Dresden, Germany.

2009 **Meeting of the partners from BRIC countries** and Europe of the IP-UniLink project on IP management under the Erasmus Mundus programme of EU, University of Campinus, Brazil.
Purpose: To discuss the report on the survey and analysis of the preparedness of HEIs on IP management.

2007 **Partner of EU International Network Project on Intellectual Property (IPNET)**
Institute/University: Alicante University, Spain
Purpose: Presented a report at the annual meeting on "IP education and management in IIT Roorkee and future planning in national context".

2007 **Alexander von Humboldt Postdoctoral Fellow** (under resumption of fellowship programme)
Institute/University: Technical University of Berlin, Germany
Purpose: Arc characteristics and behaviour of metal transfer of plain carbon steel and stainless steel using transient recorder and high speed video-graphy while operating the pulsed Current GMAW process with the help of computer aided solution of selection of pulse parameters.
Finished the final draft of the book on "Advances in pulsed current GMAW".

2006 **Alexander von Humboldt Postdoctoral Fellow** (under resumption of fellowship programme)

Institute/University: Technical University of Berlin, Germany
Purpose: To study arc characteristics and behaviour of metal transfer of plain carbon steel and stainless steel using transient recorder and high speed video-graphy while operating the pulsed Current GMAW process with the help of computer aided solution of selection of pulse parameters. Also started writing a book on "Advances in pulsed current GMAW".

2003 **Visiting Scientist (Principal Investigator), DST-BMBF collaborative Research Project**
Institute/University: Technical University of Berlin, Germany
Purpose: Carry out research work on, "Arc characteristics and behaviour of metal transfer of aluminium alloy using transient recorder and high speed video-graphy while operating the pulsed Current GMAW process with the help of computer aided solution of selection of pulse parameters".

2002 **Visiting Scientist (PI), DST-BMBF collaborative Research Project**
Institute/University: Technical University of Berlin, Germany
Purpose: Carry out research work on, "Mathematical modeling and development of software for the control of pulsed Current GMAW Process followed by experimental verification".

2001 **Visiting Scientist (PI), DST-BMBF collaborative Research Project**
Institute/University: Technical University of Berlin, Germany
Purpose: Investigation on correlation among welding parameters to facilitate and control the performance of pulsed current GMA welding process.

2001 **Visiting Scientist,** Institute/University: Fachhochschule für Technik (FHT) Esslingen and MPA Stuttgart
Purpose: Technical discussions on academic co-operation and research collaboration in the areas of fracture mechanics studies and residual stress measurement in weld joint.

2001 **Visiting Scientist under DST-DAAD PPP 2000 Indo-German Programme**
Institute/University: Technical University of Berlin, Germany
Purpose: Carry out investigation on fracture mechanism of polymer to metal adhesive joints.
Delivered two technical talks on some advanced knowledge in welding engineering.

2001 **Alexander von Humboldt Foundation sponsored visit**
Institute/University: Technical University of Munich, Germany
Purpose: Presented a research paper on "Pulsed current GMA welding provides better prospect to weld joint by improvement of its safety and reliability in engineering structures" International Conference on Aluminium (8th INALCO 2001)

1996 **Visiting Scientist under the invitation of SFB, TU Berlin sponsored by German Science Foundation**
Institute/University: Technical University of Berlin, Germany
Purpose: Delivered invited talk on "Characteristics of metal-ceramic bounding and mechanical properties of Al-base particulate composite" to the distinguished gathering in the Technical University of Berlin.

1996 **Alexander von Humboldt Postdoctoral Fellow** (under resumption of fellowship programme)
Institute/University: Technical University of Berlin, Germany
Purpose: Analytical work in the areas of "Joining of HPSN with Steel" and

"Pulsed Current MIG Welding of Al-alloy".

1995 **Alexander von Humboldt Postdoctoral Fellow** (under resumption of fellowship programme)
Institute/University: Technical University of Berlin, Germany
Purpose: Investigations on "Possibility of aluminium MIG welding by modification of pulse parameters using the correlationships valid for different power sources", "Ceramic-metal brazing" and "Laser welding of Co-base amorphous alloy film"

1995 **Alexander von Humboldt Foundation sponsored visit**
Institute/University: Joining of Materials Institute, Helsingor, Denmark
Purpose: Presented a research paper on "An analysis of weld characteristics as a function of pulse current MIG welding parameters", Int. Conf. on Joining of Materials (JOM-7)

1992 **Alexander von Humboldt Foundation sponsored visit**
University/Institute: The Hague, Nederland
Purpose: Presented a paper on "Surface characterisation in nitrogen ion implanted 316 stainless steel with and without inducing strain", Procd. Abs. IVC-12/ICSS-8, The Hague, (1992), pp. 474.

1992 **Visiting Scientist**
Institute/University: Department of Physics, Alicante University, Spain
Purpose: Delivered Lectures on "Preparation and Characterisation of Al(Mg)-Al_2O_3 cast particulate composite"

1991 – 1993 **Alexander von Humboldt Postdoctoral Fellow**
Institute/University: Technical University of Berlin, Germany
FHT Esslingen, Germany
Purpose: To investigate "Pulsed current MIG welding of Al-Zn-Mg alloy-analytical modelling of thermal behaviour and correlations among pulse parameters, weld characteristics and weld properties" Project report was submitted to the AvH foundation, Bonn, Germany

1988 **DAAD Postdoctoral Research Fellow**
Institute/University: Technical University of Berlin, West Germany
Purpose: Studied "Weld thermal cycle and structure-properties correlation of various flash butt welded dual phase steel using micro-shear test method".

PUBLICATIONS

Research Paper **More than 360 research papers** published in International and national Journals and conferences **(Appendix IV)**

Monograph/Book (Publication/Review)

- **Author : Book** on "Pulsed current gas metal arc welding : characteristics, control and applications", under the support of the Alexander von Humboldt Foundation, Germany, Publ. Springer Nature, Singapore, 2017.
- **Co-Author : Monograph** on "How Proactive IP Management Can Improve Research Collaborations: Good Practices in EU BRIC Higher Education Institutions". Publ. EU Erasmus Mundus, 2011.
- **Author : Edited Book on Int. Conf. Procd.. "**Knowledge sharing and intellectual property management-status and strategies", Lambert Academic Publishing, Saarbruecken, Germany, 2010**.**
- **Author : Book section** on "Pulsed current GMAW" in a book "New Developments in Advanced Welding", edited by Nasir Ahmed, published by Woodhead Publishing Ltd., Abington Hall, Abington, Cambridge, England, 2005.
- **Reviewer : Book proposal** on "Handbook of thermal processing of steels",

publisher Marcel Dekker/CRC press, USA, 2004.

- **Reviewer : Book proposal** on "Surface phenomenon in fusion welding processes", publisher Marcel Dekker/CRC press, USA, 2004.
- **Reviewer : Book proposal** on "Fracture mechanics of composite materials in compression", the publisher Marcel Dekker/CRC press, USA, 2004.
- **Author : Monograph** on "Welding in Offshore Constructions", Deptt. of Sci. & Tech., India, 1995.

Patent in Credit

- "A PROCESS FOR DISPERSION OF BROKEN AGGLOMERATES OF NANOPARTICLES IN VISCOUS FLUID", **Patent No**.: 292158.
- Provisional Patent, GMAW torch nozzle device for narrow gap welding, Application No. 1245/DEL/2009 dated 17.06.2009.
- Single Seam Multilayer Narrow Gap Pulse Current Gas Metal Arc Welding Technique, Application No. 1023/DEL/2010, dated 29.4.2010.
- System Protected Gas Metal Arc Welding Torch Nozzle for Ultra Narrow Gap Thick Sections welding, Application No. 201611033570 dated. 30.09.2016.
- "DISSIMILAR METALLIC COATING ON STEEL BY ACTIVATED DIFFUSION", Application No. 201711033207 dated. 19.09.2017, **Patent No**.: 390919.

INDUSTRIAL CONSULTANCY SERVICES

- Industrial visits & major consultancy services: **37 Nos**. **(Appendix V)**
- Major failure investigations: **11 Nos. (Appendix VI)**

Contractual Association

- **Consultant of** M/s Cloos India welding technology (P) ltd., New Delhi, 2009.
- **Technical (welding engg.) Consultant Advisor** of Escort Constructions Equipment, Ballavgarh, India, From 2008-2009.
- **Technical (welding engg.) Consultant Advisor** of EICHER Tractors, Faridabad, India, From 1997-1998.

Major Fields of Specialization

- Intellectual Property Management
- **Fatigue** and **Fracture Mechanics**.
- **Failure analysis** of Engineering Structure/Weld joint.
- Synthesis & Characterization of **Nano-particulate Polymer Composite**.
- Synthesis & Characterization of metal base **Particulate Composite**.
- Surface Modification of Metals and Alloys by **Ion Implantation**.
- **Hard Surfacing** of Steels for Abrasion Resistance.
- **Adhesive Joining** of Metals and Polymers.
- **Designing** of welded structure **Welding Metallurgy** & Characterization of Weld Joint.
- **Computer** Aided welding.
- **Advanced Electric Arc and Resistance Welding**.
- **Ceramic-metal brazing** for high temperature application.

MEMBERSHIP OF PROFESSIONAL BODIES

- Member of International Association of Advanced Materials, Sweden (Number: 52481913547)
- Fellow of the Indian Institute of Welding
- Fellow of the Institution of Engineers (India)
- Chartered engineer [India] of Institution of Engineers (India)
- Member, The National Academy of Sciences India, NASI/14/2008
- Life Member of the Indian Society for Construction Materials & Structures (ISCMS), India
- Former Member Society of Automotive Engineers (SAE), Inc., USA
- Member Alumni Association of IIT Roorkee (formerly University of Roorkee)
- Member International Alumni Association of Technical University of Berlin, Germany
- Former Member of the Materials Research Society

EXPERIENCE IN WORKING WITH INNOVATORS FROM DIFFERENT PART OF SOCIETY

Holding Awareness Programme for Promotion of Technopreneur	Seminar, workshop, meeting and training for grass root level innovator from unorganised sector of society including housewives, students from intermediate to higher education institutes, cottage and small scale industries and any other innovators from society
Promotion of micro, small and medium scale Technopreneur	Having long experience of counselling, preparation and assessment of project proposal received starting from Grass-root level innovator of unorganised sector of society. 40 Nos. of innovative proposals on different subjects have been promoted as given **in Appendix VII**.
Mentoring of medium and large scale Technopreneur	• **Industry:** M/s Prakash Industries, Mohan Industrial Area, Mohan, P.O- Ram Nagar, Nainital, Uttarakhand. **Title of the Project:** "Alkali Lignin Products & Cooler Pads from Dry Needles" **Project :** Approved by DSIR and NABARD, Mumbai • **Industry :** Prototype development, Roorkee, Uttarakhand **Title of the Project :** Digital Valve Controller, **Project :** Approved by DSIR • **Industry :** Prototype development, Roorkee, Uttarakhand **Title of the Project :** Evolution of some ayurvedic formulation for their potentiality in the cure and management of diseases like diabetes **Project :** Approved by DSIR • **Industry :** Prototype development, Roorkee, Uttarakhand **Title of the Project: Title of the Project:** Contact less Power Transmission and Generation Device **Project :** Approved by DSIR
Contribution as Rotarian of Rotary International Club, Mid Town Roorkee, India	• Tree plantation • Health care • Vocational training

APPENDIX - I

Supervised M.E. / M.Tech. / M.Phil. Theses

1. **P.K. Ghosh and P.C. Gupta, (A.K. Agarwal),** "Control of grain coarsening in HAZ by varying the angle of attack to the work-piece during submerged arc welding", (1984).
2. **P.K. Ghosh, P.C. Gupta and C.L. Raina, (R.K. Gupta),** "Effect of welding parameters on surface deposition characteristics of submerged arc welds using strip electrodes", (1984).
3. **P.K. Ghosh and P.C. Gupta, (P. Narashimullu),** "Design and fabrication of transverse strain test assembly for the assessment of the resistance to solidification cracking of submerged arc weld joints", (1984).
4. **P.K. Ghosh and P.C. Gupta, (S.K. Sarma),** "Effect of polarity on the metal deposition characteristics in submerged arc welding process", (1985).
5. **P.K. Ghosh and P.C. Gupta, (N.K. Jain),** "Effect of pulsed current parameters on the weld characteristics in MIG welding", (1986).
6. **P.K. Ghosh and P.C. Gupta, (S. Vissa),** "Influence of pulse current parameters on the properties of heat affected zone in MIG welding of Al-Zn-Mg alloy", (1986).
7. **P.K. Ghosh and P.C. Gupta, (T.K. Goswami)**, "Effect of flash butt welding parameters on the weld properties of high strength low alloy steels", (1986).
8. **P.K. Ghosh and M. Breazu, (B. Vardhan),** "Studies on weld metal properties of electro-slag welds using basic and neutral fluxes", (1986).
9. **P.K. Ghosh and P.C. Gupta, (Maj. P.K. Ghosh),** "Effect of pulse current parameters on weld bead characteristics of Al-Mg filler alloy deposited in MIG welding", (1987).
10. **P.K. Ghosh and A.K. Khanna, (G.M. Reddy),** "Studies on influence of polarity on mechanical properties of submerged arc weld", (1987).
11. **P.K. Ghosh and S.R. Gupta, (R. Rathi),** "Influence of pulse parameters on some mechanical properties of MIG welded Al-Zn-Mg alloy", (1987).
12. **P.K. Ghosh and M. Breazu, (D.K.Singh),** "The influence of welding parameters on properties of Al-Zn-Mg alloy welds produced by pulsed TIG welding with cold wire feeding", (1987).
13. **P.K. Ghosh and P.C. Gupta, (Ompal),** "Investigation on weld thermal cycle and mechanical properties of flash butt welded dual phase steel", (1988).
14. **P.K. Ghosh and P.C. Gupta, (Rajesh Somani),** "Studies on characteristics of aluminium weld deposit produced by pulsed current MIG welding process", (1989).
15. **K.N. Krishnan and P.K. Ghosh, (M. Deshpande),** "Effect of welding parameters on the quality of flash butt welded austenitic stainless steel", (1989).

16. **P.K. Ghosh, S. Ray and S.K. Barthwal, (Vijay Sharma), "Influence of pulsed current parameters on the weld metal characteristics in MIG welding of Al-Zn-Mg alloy", (1990).

17. **S.K. Nath and P.K. Ghosh, (Parikshit Sharma),** "Studies on fatigue properties of resistance spot welded dual phase steel", (1990).
18. **P.K. Ghosh and P. Nagesh Babu, (Srikant Reddy),** "Studies on fracture toughness properties of Al-Zn-Mg alloy weldment produced by pulsed MIG welding process", (1990).
19. **P.K. Ghosh, (Upendra Singh),** "Studies on welding procedure of 9Cr-1MoVNb steel pipe under shielded metal arc and TIG welding processes", (1993).
20. **S. Ray and P.K. Ghosh, (Adarsh Sachdeva),** "TIG welding of aluminium base particulate composites", (1994).
21. **P.K. Ghosh, (Brajesh Kumar Rai),** "Studies on bead characteristics of weld deposit produced by pulse current GMAW using flux cored wire", (1995).
22. **P.C. Gupta and P.K. Ghosh, (Vinay Kumar Gupta),** "An investigation on stainless steel cladding of structural steel using pulsed current GMAW process", (1995).
23. **G.C. Kaushal and P.K. Ghosh, (Narendra Mohan),** "Formulation of flux for the submerged arc welding", (1995).
24. **P.K. Ghosh, (Neki Ram),** "Studies on hard surfacing of structural steel by thermal spraying of nickel based tungsten carbide powder", (1995).

25. **P.K. Ghosh, (Pawan Kumar Agrawal),** "Studies on manual metal arc welding of modified 9Cr-1Mo steel", (1996).
26. **P.K. Ghosh, (Venkateswarlu Kalla)**, "Studies on weld properties of pulsed current MIG welded aluminium", (1996).
27. **P.K. Ghosh, (Chinnappa Rao Basuthkar)**, "Studies on mechanical properties of resistance spot weld-bonded steel", (1996).
28. **P.K.Ghosh, (N. Sambasiva Rao)**, "Studies on weldbonding of aluminium", (1997).
29. **P.K. Ghosh, (V. Venkat Rao)**, "Analytical studies on correlations among welding parameters, weld thermal cycle and weld characteristics in pulse current GMAW", (1997).
30. **P.K. Ghosh, (Maqsood Ahmed)**, "Software for determination of welding parameters to achieve microstructure and mechanical properties of multipass submerged arc welds", (1997).
31. **S. Ray, P.K. Ghosh, (Shailendra Singh)**, "TIG welding of Al-Al_2O_3 composite", (1997).
32. **P.K. Ghosh and P.S. Mishra, (Dheerendra Kr. Dwivedi)**, "Modification of commercial powder by addition of aluminium powder for oxidation resistant hard surfacing by thermal spray", (1997).
33. **P.K. Ghosh, (Rajesh Kr. Yadav)**, "Analytical studies on correlations among thermal behaviour, microstructure and characteristic of pulsed MIG weld of Al-Zn-Mg alloy", (1998).
34. **P.K. Ghosh, (Vivek),** "Studies on weld-bonding of stainless steel", (1998).
35. **P.K. Ghosh, (Balaram)**, "Studies on weld-bonding of steel sheet using particulate composite adhesive", (1998).
36. **P.K. Ghosh (P.V. Sreenivasa Rao)**, "Studies on development of expert system for pulsed current GMAW of Al-Zn-Mg alloy", (1999).
37. **P.K. Ghosh and B.K. Mishra (Bh. Aruna Prasad)**, "Design of aluminium weld joints subjected to static and dynamic loading", (1999).
38. **S. Ray and P.K. Ghosh (Praveen Malik), "Surface modification of PP by d.c. glow discharge using stainless steel electrode, (1999).
39. **P.K. Ghosh and B.K. Mishra (Ritesh Saini)**, "Studies on design of aluminium butt weld joint using finite element analysis", (2000).
40. **Navneet Arora and P. K. Ghosh (Anil Kumar Sethi)**, "Studies on hard surfacing of martensitic stainless steel by gas thermal spraying process", (2000).
41. **P.K. Ghosh and Navneet Arora (Rajneesh Kumar)**, "Fracture toughness of weld joint of large structural steel pipe", (2000).
42. **P.K. Ghosh (Kuldip Kaushik)**, "Fatigue crack growth rate of weld joint of large structural steel pipe" (2000).
43. **P.K. Ghosh (Pawan Kumar Arora)**, "Studies on effect of groove design and heat input on residual stresses of weld joints of structural steel" (2001).
44. **P.K. Ghosh (Surendra Mohan Sribastava)**, "Studies on development of knowledge base for inspection and maintenance of thermit weld joint of steel rails" (2001).
45. **P.K. Ghosh (Vinay Kr. Patel)**, "Studies on repair welding of resistance spot weld of steel sheet by further use of resistance spot welding in the vicinity of previous weld" (2001).
46. **P.K. GHOSH (Nitin Vardani)**, "Studies on welding of cast aluminium alloy particulate composite" (2004).
47. **P.K. Ghosh (Atul Kumar Saxena)**, "Studies on weldability of HSLA steel under submerged arc welding process" (2004).
48. **P.K. Ghosh (Balaji Gupta Jami)**, "Investigation on pulsed current GMA welding of Al-Li alloy", (2004).
49. **P.K. Ghosh (M. Ravi Reddy)**, "Stress analysis and designing of weld joints", (2004).
50. **P.K. Ghosh (Sarada Kameswari Nukala)**, "Studies on adhesive joining of ferrous and nonferrous sheets using particulate composite adhesive", (2004).
51. **P.K. Ghosh & Dimitris Kosteas (Yogiraj U. Pardhi) [IIT-DAAD],** "Weld imperfections in aluminium weld joints and analysis of current status on quality classification under fatigue", (2005).
52. **P.K. Ghosh (J. Raghu Shant)**, "Pulsed current GMAW of Al-Li alloy sheet", (2006).
53. **P.K. Ghosh and Lutz Dorn (Dhamal Tushar B.) [IIT-DAAD)]**, "Ceramic metal Joining for elevated temperature applications", (2006).
54. **P.K. Ghosh (Jadhav Sachin D.)**, "Finite element analysis of the effect of weld design on stress distribution in pipe welds", (2006).

55. **D.K. Deweivedi, P.K. Ghosh, Ulrich Dilthey & Frank Hocker (Rakesh Kumar) [IIT-DAAD]**, "Welding of thin sheet of aluminium alloys by pulsed current GMAW", (2006)
56. **P.K. Ghosh and S.K. Nath (Dibyendu Dhara)**, "Hard surfacing of martensitic stainless steel by thermal spraying of powder", (2007).
57. **P.K. Ghosh & Ulrich Dilthey (Srimanta sam) [IIT-DAAD)]**, "Study on welding of sheet metal by gas metal arc welding process", (2007).
58. **P.K. Ghosh (Ajit Kumar Pramanick)**, "Studies on shrinkage stresses of weld under different conditions of welding", (2007).
59. **P.K. Ghosh (Amarnath Chanda)**, "Development of a user friendly estimation of residual life of a dynamic loaded component", (2007).
60. **D.K. Deweivedi & P.K. Ghosh (D. Jagannadham)**, "Analytical studies on design of weld joint for disaster resistant structure of high strength steel" (2007).
61. **P.K. Ghosh (Ravindra Kumar)**, "Surface modification of steel by controlled TIG arcing process", (2008).
62. **P.K. Ghosh (Ravi Ranjan)**, "Studies on fracture mechanics of pulsed current gas metal arc weld of HSLA steel", (2009).
63. **P.K. Ghosh, Vivek Pancholi & N.R. Mondal [IITKgp] (Atanu Pal)**, "Friction stir welding of aluminium alloy", (2010).
64. **P.K. Ghosh & Devendra Singh (Abhishek Pathak)**, "Studies on fatigue and fracture behaviour of inorganic particle reinforced epoxy adhesive and its metallic joint", (2010).
65. **P.K. Ghosh & S.Ram [IITKgp) (Telgote Ashish)**, "Studies on characteristics of inorganic nano particles filled epoxy adhesive produced by ex-situ and in-situ reinforcement techniques", (2010).
66. **P.K.Ghosh & D.K. Diwedi (Md. Faseeulla khan)**, "Weld- bonding of aluminium alloys", (2010).
67. **P.K. Ghosh & Vivek Pancholi (Amit Muke)**, "Characterization of weldability of scandium inoculated Al-Zn-Mg alloy", (2011).
68. **Manas Mahapatra & P.K. Ghosh (Rohit Mishra)**, "Minimizing the residual shrinkages and stresses of thick pipe welds using narrow gap welding", (2012).
69. **P.K. Ghosh & Uwe Fussel (Ankit Kumar),** "Studies on plasma shielding and arc physics in pulse current gas metal arc welding affecting quality of weld", (2013).
70. **Manas Mahapatra & P.K. Ghosh (Sudhir Kumar)**, "Process and procedure dependent thermal behaviour affecting residual stress and microstructural characteristics of weld joint", (2013).
71. **P.K. Ghosh & Eric J. Mittemeijer (Ankur Chauhan) [IIT-DAAD]**, "Studies on nitriding of Ti based Al alloy for improvement of surface properties", (2014).
72. **Manas Mahapatra & P.K. Ghosh (Sudhir Kumar)**, "Narrow gap arc welding of high strength steel to reduce shrinkage and residual stresses for high temperature applications", (2014).
73. **Manas Mahapatra & P.K. Ghosh (Abhilash Kumar Balla)**, "Comparative studies of dry ring core and blind hole drilling based residual stress determination of butt welds", (2015).
74. **P.K. Ghosh & Uwe Fuessel (Gurjeet Singh) [IIT-DAAD],** "Studies on protection of tungsten electrode for life improvement under GTAW process" (2015).
75. **P.K. Ghosh (Avantak Patel),** "Studies on adhesive joining of copper using nano-composite adhesive", (2015).
76. **P.K. Ghosh & Guido Schmitz (Yug Joshi) [IIT-DAAD]**, "Manufacturing and characterization of thin film $LiMn_2O_4$ battery electrode", (2016).
77. **P.K. Ghosh & Wolfgang Bleck (Ajeet Singh Rajput) [IIT-DAAD]**, "Investigating the influence of hydrogen on delayed fracture in high manganese steels and AHSS sheets", (2016).
78. **P.K. Ghosh and Thomas Ummenhofer (Raman) [IIT-DAAD],** "Fatigue properties of UDM processed epoxy based adhesive joints and the distribution of stress field", (2017).
79. **P.K. Ghosh & Sourav Das (Deepak Sharma)**, "Particulate composite surfacing of steel by TIG arcing process", (2017).
80. **P.K. Ghosh (Nikhil Singla) IDD,** "To study the optical electrical properties of Ultrasonic Dual Mixing (UDM) processed polymer", (2017).
81. **P.K. Ghosh and Thomas Ummenhofer (Priyanka Arora) [IIT-DAAD],** Re-Evaluation of existing fatigue classes in Eurocode 3.1-9", (2018).
82. **P.K. Ghosh & Uwe Fuessel (Saba Ahmad) [IIT-DAAD],** Advanced studies on inert gas schielded arc environment in welding", (2018).

83. **P.K. Ghosh & Degala Venkata Kiran, IIT Tirupati, "**Design and manufacturing of a narrow groove tandem gas metal arc welding torch", (2020).

Guide (Name of the student) ; ** M.Phil. Thesis

APPENDIX - II

Supervised Ph.D. Thesis

1. **R.K. Mohindra and P.K. Ghosh, (A.K. Goel),** "Surface modification of Aluminium Steel and Nimonic Alloy by Ion-Implantation", Department of Physics, Kurukshetra University, India, **Awarded,** (1991).
2. **P.K. Ghosh and P.C. Gupta, (Hamad Mahal Hussain),** "Influence of pulsed current MIG welding on the mechanical properties of Al-Zn-Mg alloy weldment", Department of Mechanical & Industrial Engineering, University of Roorkee, India, **Awarded,** (1994).
3. **R.K. Mohindra and P.K. Ghosh, (Sanjeev Agarwal),** "Studies on surface characteristics of nitrogen ion implanted austenitic stainless steel", Department of Physics, Kurukshetra University, India, **Awarded,** (1995).
4. **P.K. Ghosh and S. Ray (Jawdat A. Al-Jarrah),** "Synthesis and Tribological Characterization of Aluminium Base Composites", Department of Mechanical & Industrial Engineering, University of Roorkee, India, **Awarded,** (1998).
5. **P.K. Ghosh and S.R. Gupta (G.S. Randhawa),** "Investigation into Positional Welding of Structural Steel Using Pulse Current GMAW Process", Department of Mechanical & Industrial Engineering, University of Roorkee, India, **Awarded,** (1999).
6. **P.K. Ghosh and S. Ray (Shantanu Bhowmik),** "Characteristics of adhesive joining of polymers to steel", Department of Mechanical & Industrial Engineering, University of Roorkee, India, **Awarded,** (2002).
7. **P.K. Ghosh and S.Ray (Abdul Haqq A. Hamid Aldabbagh),** "Aluminium Based in-situ Composites Synthesis, Mechanical and Tribological Properties", Department of Mechanical & Industrial Engineering, University of Roorkee, India, **Awarded,** (2005).
8. **P.K. Ghosh and J.S. Saini (V.K. Goyal),** "Effect of Thermal and Solidification Behaviour on Characteristics of Pulsed Current GMA Weld", Department of Mechanical and Industrial Engineering, Indian Institute of Technology Roorkee, India, **Awarded,** (2007).
9. **P.K. Ghosh and S. Ray (Kulkarni Shrirang G.),** "Narrow gap pulse current gas metal arc welding of thick wall 304LN stainless steel", Indian Institute of Technology Roorkee, India, **Awarded,** (2008)**.**
10. **P.K. Ghosh (K. Devkumaran),** "Narrow gap GMA welding of high strength low alloy steel plate", Indian Institute of Technology Roorkee, India, **Awarded,** (2009)**.**
11. **P.K. Ghosh (Banshi Prasad Agarwal),** "Studies on narrow gap pulsed current GMA welding of austenitic stainless steel", Indian Institute of Technology Roorkee, India, **Awarded, (**2010)**.**
12. **P.K. Ghosh (Rajamurugan),** "Pulsed current gas metal arc welding of dissimilar austenitic stainless steel and HSLA steel", Indian Institute of Technology Roorkee, India, **Awarded,** (2012).
13. **P.K. Ghosh (Sudipta Haldar), "**Characterization of Ultrasonically Dispersed Nano Particle Filled Epoxy adhesive", Indian Institute of Technology Roorkee, India, **Awarded,** (2012)**.**
14. **P.K. Ghosh and S. Ray (Manjeet Singh Goyat), "**Influence of inorganic nano filler on modification of physical and mechanical characteristics of adhesive", Indian Institute of Technology Roorkee, India, **Awarded, (**2013)**.**
15. **P.K. Ghosh and V. Pancholi (Paresh Kumar Mandal),** "Effect of scandium addition on weldability of Al-Zn-Mg alloy under controlled thermal cycle", **Awarded,** (2017)**.**
16. **P.K. Ghosh and J.S. Saini (S. Basu),** "Microstructural modification of steel surface by pulse current autogenous tungsten inert gas welding", **Awarded** (2018).
17. **P.K. Ghosh (Kaushal Kumar)**, "Nano filler polymer composite", **Awarded** (2017).
18. **P.K. Ghosh (Ravindra Kumar)**, "Surface modification of steel by TIG arcing", **Awarded** (2018).
19. **P.K. Ghosh (Ramkishore)**, "Narrow gap gas metal arc welding of dissimilar weld joint of stainless steel and HSLA steel", **Awarded** (2018).
20. **P.K. Ghosh (Arun Kumar),** "Polymer based carbon nano tube composite", **Awarded** (2018)**.**
21. **P.K. Ghosh (Sudhir Kumar),** "Effect of TIG surfacing on fatigue properties of steel", **Awarded** (2018)**.**

22. **P.K. Ghosh, Rajat Agarwal (Juhi Raghuvanshi),** "Innovation in Micro-Entrepreneurial Activities in India", **Awarded, 2019.**
23. **P.K. Ghosh, Rajat Agarwal (Ankur Kashyap),** "Education policy supporting innovation and economic growth of India", **Awarded, 2019**.
24. **P.K. Ghosh, (Nikki Archana Barla),** "Simulation of stress induced transformation and sensitization in arc welded stainless steel", **Awarded, 2021**.
25. **Sourav Das and P.K. Ghosh, (Nilesh Kumar),** "Modification of Chemistry induced surface morphology by pulse tungsten inert gas arcing", **Awarded, 2022.**

Guide (Name of the student)

APPENDIX - III

Sponsored Research Projects

a) Principal Investigator

i) "To study the effect of modification in welding parameters and filler metal composition on the improvement of mechanical properties of weld", U.P. State Council of Science and Technology, (1984).

ii) "Development of a process for silver coating on aluminium alloy filler wire used in MIG welding process", U.P. State council of science and technology, (1985).

iii) "Influence of flux constituents on physicochemical and metallurgical properties of some submerged arc welding fluxes", Department of Science and Technology, India, (1988 - 91).

iv) "Studies on adhesive bonding of polymers to metals", University Grants Commission, India, (1995 - 1999).

v) "Investigation on positional welding of structural steel using pulsed current gas metal arc welding process", Council of Scientific and Industrial Research, India, (1998 -2001).

vi) "Investigation on fracture mechanism of polymer to metal adhesive joints", DST-DAAD Project Based Personnel Exchange Programme - 2000, University of Roorkee and TU Berlin, (2000-2002).

vii) "Investigation on correlation among welding parameters to facilitate and control the performance of pulsed current GMA welding process", DST-BMBF project with TU Berlin, Germany, (2001 – 2004).

viii) "Comparative studies on fracture mechanics properties of conventional and narrow gap SMA welds with GMA welds of carbon steel and stainless steel pipes**"** Board of Research in Nuclear Sciences (BRNS), (2001-2006).

ix) "Studies on ambient and elevated temperature properties of joints of metals prepared by adhesive joining using nano-particle filled adhesive", Department of Science and Technology, India, (2007-2010).

x) "Investigation on effect of pulsed current gas metal arc welding on joint characteristics of scandium inoculated high strength aluminium alloy", Council of Scientific and Industrial Research, India, (2007 -2010).

xi) Indian Partner of EU International Network Project on Intellectual Property (IPNET), Alicante University, Spain (2007).

xii) Indian partner of IP-UniLink project under the Erasmus Mundus programme of EU, Coordinated by Alicante University, Spain, (2009-2011).

xiii) "Investigation on advanced welding technique to improve properties of dissimilar weld joint of austenitic stainless steel to high strength low alloy steel", Defence Research and Development Organization, (2009-2013).

xiv) "Optimisation of ultrasonic dual mixing for homogeneous distribution of inorganic nano particles in epoxy based adhesive affecting its thermal and mechanical properties" Department of Science and Technology, India, (2012-2015).

xv) Indian partner of HEIP-LINK project under the Erasmus Mundus Action 3 Programme of EC, "Promoting the international dimension of research in HEIs", Coordinated by Alicante University, Spain, (Sept. 2012-2014).

xvi) "To study critical application of pulse current gas tungsten Arching Process in surface processing of steel for desired properties", Council of Scientific and Industrial Research, India, (2013-2015).

b) Co-Investigator

xvii) "Studies on the effect of welding parameters on the mechanical properties of pulsed arc welded Al-Zn-Mg alloy", Council of Scientific and Industrial Research, India, (1986 -90).

xviii) "Investigation on the mechanical properties of ion implanted samples", University Grants

Commission, India, (1987 - 90).

xix) "Studies on fracture toughness and fatigue crack growth behaviour of pulsed MIG welded Al-Zn-Mg alloy", Council of Scientific and Ind. Research, India, (1992-95).

xx) 'Investigation on the effect of crack tip constant on material J-R curve", Board of Research in Nuclear Sciences (BRNS), (2004-2006).

APPENDIX - IV

Publications in Specialised Areas

Joining of Materials

Conventional Arc Welding :

1. P.C. Gupta, P.K. Ghosh and S.K. Sharma, "Effect of polarity on melting rate in submerged arc welding", Indian Welding Journal, **19**, 3(1987), pp. 228-233. **[Citation: 3]**
2. P.K. Ghosh and P.C. Gupta, "Influence of positioning of electrode on the morphology of HAZ in submerged arc welding SA203 steel", Trans. Iron & Steel Inst. Japan, **28**, 5(1988), pp. 392-399.
3. S.K. Nath, P.K. Ghosh, S. Ray, V.N.S. Mathur and M.L. Kapoor, "Weldability of dual phase steel", Procd. International Conf. on Welding Tech. in developing countries present status and future needs, Sept. 26-28, (1988), University of Roorkee, Roorkee, India, pp. II-27-32.
4. P.C. Gupta, S.R. Gupta and P.K. Ghosh, "Weldability of steel", Procd. Seminar on welding in the industry, Karnal, India, **13**, Feb.(1988) pp. 6.1-6.12.
5. P.C. Gupta and P.K. Ghosh, "Welding Research Laboratory- An Overview", Indian Welding Journal, **22**, 2(1990) pp.58-66.
6. P. Yongyuth, P.K. Ghosh, P.C. Gupta, A.K. Patwardhan and S. Prakash, "Influence of macro/microstructure on the toughness of all weld multipass submerged arc welded C-Mn steel deposits", ISIJ Int., **32**, 6(1992) pp. 771-778. **[Citation: 14]**
7. G. Madhusudhan Reddy and P.K. Ghosh, "The influence of electrode polarity and welding current on mechanical properties of submerged arc weld (SAW) in C-Mn steels", Indian Welding J., **26**, 3(1993) pp. 1-4. **[Citation: 1]**
8. P. Yongyuth, P.K. Ghosh, P.C. Gupta, A.K. Patwardhan and S. Prakash, "Influence of macrostructure on tensile properties of multipass SAW C-Mn steel deposit", Mater. Trans. JIM, **34**, 6(1993) pp. 533-540. **[Citation: 4]**
9. P.K. Ghosh, P.C.Gupta, V.S.Dwivedi, Ram Avtar and B.K.Jha, "Weldability of hot rolled dual phase steel under manual metal arc welding process", Procd. 9th ISME Conf. 94, Deptt. of Mech. & Ind. Engg., University of Roorkee, Nov. 10-11, (1994) pp. 861-869.
10. P.K. Ghosh, P. Yongyuth, P.C. Gupta, A.K. Patwardhan and Satya Prakash, "Two dimensional spatial geometric solution for estimating the macro-constituents affecting the mechanical properties of multipass C-Mn steel SAW deposits", ISIJ Int., **35**, 1(1995) pp. 63-70. **[Citation: 3]**
11. P. Yongyuth, P.K. Ghosh, P.C. Gupta, A.K. Patwardhan and Satya Prakash, "Influence of macro/microstructure on the notch tensile properties of multipass SAW deposit of C-Mn steel", Int. J. Join. Mater., **7**, 2/3(1995) pp. 87-94. **[Citation: 2]**
12. P.K. Ghosh, "Failure Investigation of weld joints", Procd. National Seminar on Weld Failures, Jadavpur University, Calcutta, 2-3 February, (1996).
13. P.K. Ghosh and S. Ray, "GTA welding of cast Al(Mg)-Al_2O_3 particulate composite", Procd. ICAMIE, Deptt. of Mech. & Ind. Engg., University of Roorkee, 6-8 February, (1997), pp. 1051-1058.
14. P.K. Ghosh and P.K. Agarwal, "Manual metal arc welding of modified 9Cr-1Mo steel pipe", National Weld Meet' 97, Indian Institute of Welding, Calcutta, 26th July, 1997, Procd. Tech. Session III ; Ind. Weld. J., **31**, 1(1998).
15. P.K. Ghosh, "Computer aided welding - a new horizon to build up confidence and reliability on quality of multipass submerged arc weld", Procd. on Recent Trends in Welding Technology, Annual Seminar IIW Delhi branch, Feb. 14, (1998).
16. P.K. Ghosh, "Critical aspects of welding of high strength steels", Procd. Seminar, high strength steels processing and applications, SAIL, Ranchi, 14-15 April, (1999) pp. 162-167.
17. P.K. Ghosh and Maqsood Ahmed, "Characterisation of mechanical properties of multipass submerged arc weld by model analysis of its microstructure facilitated by aid of computer", Indian Welding Journal, **32**, 4(1999) pp. 32-43.

18. P.K. Ghosh and Upendra Singh, "Weldability of modified 9Cr-1MoVNb steel pipe under shielded metal arc and tungsten inert gas welding processes", Prod. Int. Conf. on High Temperature Steel-Characterization, MPA Stuttgart, Germany, October 10, (2002).

19. P.K. Ghosh, K.K. Vaze, H.S. Kushwaha, P.K. Singh, J. Krishnan and Shrirang Kulkarni, "Effect of narrow gap SMA welding on characteristics of 304LN stainless steel pipe weld", Procd. XIII National Conf. of Indian Soc. of Mech. Eng. (ISME-2003), IIT Roorkee, December 30-31, 2003.

20. P.K. Ghosh, P.C. Gupta, P. Nagesh Babu and Yogesh Gupta, "Influence of pre and post weld heating on weldability of modified 9Cr-1MoVNb steel plates under SMA and TIG welding processes", ISIJ Int., **44**, 7(2004) pp. 1201-1210. **[Citation: 11]**

21. P.K. Ghosh and Upendra Singh, "Influence of pre and post weld heating on weldability of modified 9Cr-1MoVNb steel pipe under SMA and TIG welding processes", Sc. & Tech. Weld. & Joining, **9**, 3(2004) pp. 229-236. **[Citation: 20]**

22. K. Devakumaran, M. Ravi Reddy and P.K. Ghosh, "Experimental investigation on the transverse shrinkage stress and distortion generated in butt welded joints", Procd. Int. Symp. of Research Studies on Mater. Sc. & Engg., IIT Madras, 20-22 December (2004).

23. P. K. Ghosh, A. K. Saxena and K. Devakumaran, "Weldability of controlled rolled micro alloyed thick HSLA steel plates for fabrication of penstock liners", Ind. Weld. J., 38, 1(2005), pp. 56-65.

24. K. Devakumaran, P.K. Ghosh, S. Ray, P.K. Singh and J. Krishnan, "Narrow groove SMA welding of HSLA (Grade : DIN – 20 MnMoNi 55) steel plates", Procd. Int. Weld. Congress, Ind. Inst. Weld, Mumbai, 16-19 February (2005), IWA 021.

25. P.K. Ghosh, M. Ravi Reddy and K. Devakumaran, "Distortion and transverse shrinkage stress in butt welds of steel plates under different welding procedure and parameters of GMAW and SMAW", Ind. Weld. J., **38**, 4(2005) pp. 15-23. **[Citation: 2]**

26. Shrirang Kulkarni, P.K. Ghosh, S. Ray, H.S. Kushwaha, K.K. Vaze, P.K. Singh and J. Krishnan, "Comparative studies on characteristics of conventional V-groove and narrow groove SMA welds of 304LN stainless steel pipes", Procd. Int. Weld. Congress, Ind. Inst. Weld, Mumbai, 16-19 February (2005), IWA 021.

Pulsed Current Welding :

27. P.K. Ghosh, P.C. Gupta and N.K. Jain, "Effect of pulse frequency on the weld seam properties in pulsed-arc MIG welding of Al-Zn-Mg alloy", ALUMINIUM, **64**, 9(1988) pp.933-935. **[Citation: 8]**

28. P.C. Gupta, P.K. Ghosh and S. Vissa, "Influence of pulse frequency on the properties of HAZ in pulsed MIG welded Al-Zn-Mg alloy", Procd. International Conf. on Welding Technology in developing countries present status and future needs, Sept. 26-28, (1988) pp. 1-71-77 **[Citation: 6]**.

29. D.K. Singh, P.K. Ghosh and M. Breazu, "Studies on the properties of Al-Zn-Mg alloy weld joints produced by using with and without pulse current TIG welding", Procd. International Conf. on Welding Technology in developing countries present status and future needs, Sept. 26-28, (1988), University of Roorkee, Roorkee, India, pp. III-109-116.

30. D.K. Singh, P.K. Ghosh, M. Breazu and L. Issler, "Mechanical properties of weld deposit in TIG welded Al-Zn-Mg alloy". Procd., Silver Jubilee National Seminar on Alloy Design and Development, Deptt. of Metallurgical Engg., University of Roorkee, 10-11 March, (1989).

31. P.K. Ghosh, P.C. Gupta and N.K. Jain, "Studies on the properties of weld metal deposited at various pulse frequencies in MIG welding of Al-Zn-Mg alloy", Indian Welding Journal, 21, 4(1989) pp. 550-558. **[Citation: 9]**

32. P.K. Ghosh, S.R. Gupta, P.C. Gupta and R. Rathi, "Pulsed MIG welding - Influence of HAZ and porosity content of weld deposit". Procd. Silver Jubilee National Seminar on Alloy Design and Development, Deptt. of Metallurgical Engg., University of Roorkee, 10-11 March, (1989).

33. P.K. Ghosh, S.R. Gupta, P.C. Gupta and R. Rathi, "Pulsed MIG welding of Al-Zn-Mg alloy", Procd. National Welding Seminar-89, Indian Inst. of Welding, Delhi, 27-29, Dec. (1989) pp. 22.1-22.11.

34. P.K. Ghosh, S.R. Gupta, P.C. Gupta and R. Rathi, "Pulsed MIG welding of Al-Zn-Mg alloy", Materials Trans. JIM, **31**, 8(1990) pp.723-729. **[Citation: 20]**.

35. P.K.Ghosh, S.R.Gupta, P.C.Gupta and R.Rathi, "Influence of pulsed MIG welding on the microstructure and porosity content of Al-Zn-Mg alloy weldment", Practical Metallography, **27**, (1990) pp.613-626. **[Citation: 14]**.

36. P.K. Ghosh and P.C. Gupta, "Pulsed current MIG welding - An effective process for production of Al-Zn-Mg alloy weldment having improved mechanical properties", National Workshop on identification of specific areas for research in welding Sc. and Tech., DST, New Delhi, July (1990) p. 12.

37. P.K. Ghosh and Vijay Sharma, "Chemical composition and microstructure in pulsed MIG welded Al-Zn-Mg alloy", Materials Trans. JIM, **32**, 2(1991) pp.145-150. **[Citation: 17]**.

38. P.K. Ghosh, P.C. Gupta and R. Somani, "Influence of pulse parameters on the porosity formation in pulsed MIG weld deposit of aluminium alloy", Int. J. Join. Mater., **3**, 2(1991) pp.49-54 **[Citation : 6]**.

39. P.K. Ghosh, P.C. Gupta and R. Somani, "Influence of pulse parameters on bead geometry and HAZ during bead on plate deposition by MIG welding process", Z. Metallkde., **82**, 10(1991) pp.756-762. **[Citation: 11]**.

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3. P.K. Ghosh, "Influence of thermomechanical processing on the mechanical and physical properties of Al-Mg-Si alloy containing Cr and Ti", Z. Metallkde., **82**, 9(1991) pp. 727-730.**[Citation: 1].**
4. P.K. Ghosh, "Advances in failure investigation of steel bridges", Bridge engineering-some issues of research interest, edtd. by Prof. Prem Krishna, Deptt. of Civil Engineering, IIT Roorkee, June (2002) pp. 37-58.
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7. P.K Mandal, V. Pancholi, P.K. Ghosh, "Microstructural refinement through scandium inoculation and its effect on mechanical properties of as-cast Al-Zn-Mg alloys", Procd. on International Symposium for Research Scholar on Metallurgy, Materials Science and Engineering, ISRS 2012, IIT Madras, Dec.13-15, (2012).

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10. P.K Mandal, P.K. Ghosh, "Evaluation of fracture toughness of cast Al-Zn-Mg alloys", Procd. on International conference on "Inspiring Growth", 62nd Indian Foundry Congress, Gandhinagar, Near Ahmedabad, Feb. 7-9, (2014).
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Publication in Journals	230
Publication in Conferences	140
Total	**370**

[Citation 4493 as on June, 2023]

	All	Since 2018
Citations	4493	2261
h-index	35	23
i10-index	120	65

APPENDIX - V

Industrial Visits and Major Consultancy Services

1. "Weldability of dual phase steel produced by the steel authority of India limited", Steel Authority of India Ltd., Ranchi, India, (1985)
2. "Spot welding of carbon steel bush to bronze bellow", Danfoss India Ltd., (1987)
3. "Spot welding of bronze bush to bronze bellow", Danfoss India Ltd., (1988)
4. "Spot welding of steel bush to bronze bellow", Danfoss India Ltd., (1988)
5. "Micro joining of stainless steel bellow for contactor", Danfoss India Ltd., (1988)
6. "Weldability of HSLA - 80 steel produced by the steel authority of India limited under SAW process", **Steel Authority of India Ltd.**, Ranchi, India, (1990)
7. "Weld thermal cycle and mechanical properties of flash butt welded dual phase steel produced by the steel authority of India limited", **Steel Authority of India Ltd**., Ranchi, India, (1990)
8. "Behaviour of power source and weld characteristics in pulsed current GMAW process", REM Schweisstechnik, Uhingen, Germany, Scientific Co-operation, (1992)
9. "Weldability of modified 9Cr-1Mo steel produced by the steel authority of India limited", **Steel Authority of India Ltd.**, Ranchi, India, (1993)

10. “Design and formulation of fused flux for submerged arc welding of LPG cylinder”, Super Weld India, Yamunanagar, India, (1995).
11. “Design and formulation of fused flux for submerged arc welding of LPG cylinder”, Super Weld India, Yamunanagar, India, (1995).
12. “Fabrication of aluminium structural components”, Metallbau Schreiber GmbH, Wolfschlugen, Germany, Scientific Co-operation, (1996).
13. “Welding Consultant”, **EICHER tractors Ltd**., Faridabad, India, (1997).
14. “Characterisation of SA 333 Gr. 6 Pipe weld for PHT system of PHWR”, Reactor Safety Division, **Bhabha Atomic Research Centre**, Trombay, India, (1998).
15. “Development of SMAW electrode for welding of armoured steel”, M/s Mittal Engineering Works, Ghaziabad, (1999).
16 “Quality improvement of Alumino Thermit Weld of Rail, M/s Modern Rail Welders Pvt. Ltd., Mumbai, India, (2000).
17. “Technical Consultant for Alumino Thermit Welding of Rail”, Modern Rail Welders Pvt. Ltd., India, (2000).
18. Technical (welding engineering) **Consultant Advisor of EICHER Tractors, Faridabad, India (1997-2000).**
19. “Weld fabrication of long boom of concrete mixture transportation system” Putz Meister GmbH, Germany, Scientific Co-operation, (2001).
20. “Fabrication of aluminium structure for space station”, Metallbau Schreiber GmbH, Wolfschlugen, Germany, Scientific Co-operation, (2001).
21. “Quality assurance by ultrasonic and dye penetrant tests of elbow liner welding, Electro mechanical department, **Tehri hydro development corporation Ltd.,** (2000-2001).
22. “Advances in Materials Engineering”, Materials Engineering Department, Moratuwa University, Srilanka, Asian Development Bank, (2001).
23. “Construction of penstocks for Maneri Bhali Hydal Sheme-II power project”, **Irrigation Department Uttranchal Govt.** (2002-2004)
24. “Determination of fracture properties of narrow gap stainless steel pipe welds”, Reactor Safety Division, **Bhabha Atomic Research Centre,** Trombay, India, (2000-2004).
25. “Welding of bicycle frame”, T I Cycles India, Chennai, (2002).
26. “Stretched zone width measurements and metallurgical investigations of piping components” Reactor Safety Division, **Bhabha Atomic Research Centre, Trombay**, India, (2001-2004).
27. “Technical feasibility report on utilization of silt ejected out of the power plants on Bhagirathi river”, **Uttaranchal Jal Vidyut Nigam Ltd.,** (2005).
28. “Design and Process establishment for welding and brazing of various product of bellow housing and bellow”, Indfos Industries Limited, (2004-2005).
29. “Technical delivery requirements for SAILMA plates for Singoli Bhatwari hydro electric project, Engineering Construction & Contracts Division, **M/s Larsen &Toubro Ltd.,** (2008).
30. "Consultancy in welding engineering and training for fabrication of equipments", **M/s Escorts Construction Equipment Ltd.,** (2008)
31. “Evaluation of dual pulse MIG welding machine Qineo pulse from Cloos, Germany”, sanctioned by **M/s Cloos india welding technology (P) ltd**., New Delhi, (2009).
32. “Fabrication of thick section of Al-Mg alloy by fillet welding using pulse current GMAW”, Metallbau Schreiber GmbH, Wolfschlugen, Germany, (2009).
35. “Data mining of thermo-physical properties of steel required for mathematical modeling o0f hot rolling process”, RDCIS, **Steel Authority of India Ltd., Ranchi**, (2012).
36. Ultrasonic testing for internal soundness testing of blooms and railway axels, **Mahindra Sanyo special Steel Pvt. Ltd., Jagdishnagar, Khopoli**, (2013).
37. “Improvement in Production of cast EN36C(S) alloy steel free from porosity and banded microstructure”, **Mahindra Sanyo special Steel Pvt. Ltd., Jagdishnagar, Khopoli**, (2014). Contracted Amount : 12,56,250.00
38. “Testing and evaluation of magnetic characteristics of ALNICO-6”, **Hindustan Aeronautics Limited, Lucknow,** (2014). Contracted Amount : 2,00,000.00

APPENDIX - VI

Major Failure Investigations

1. "Failure of aluminium bridge girders due to stress corrosion cracking", (IR No. 919/1977) National Metallurgical Laboratory, CSIR, India, (1977).
2. "Investigation on defects in aluminium sheets and circles", (IR No. 953/1978) NML, CSIR, India, (1978).
3. "Defects and loss in production of aluminium utensils", Bihar Aluminium Utensil Manufacturing Association, Patna, India, (1978).
4. "Leakage in stainless steel bellows produced by deep drawing process", Danfoss India Ltd., (1988).
5. "Failure of boiler tube in thermal power plant", **National Thermal Power Corporation**, India, (1994).
6. "Failure of submerged arc welded SA - 516 Gr.60 steel under long seam bend test", **Indian Sugar and General Engineering Corporation**, Yamunanagar, India, (1994).
7. "Investigation on failure of Parvati and Keotan bridge girders", Government of India-Ministry of Railways, Research Development and Standards Organization, **Indian Railways**, Lucknow, India, (1996).
8. "Inspection and consultancy on driving shaft failure of the Gunhill rope-way Musoorie", (2005).
9. "Investigation on possible damage in metallic part of the machines exposed in heat due to fire took place at mv enterprises plant at Hardwar road, Dehradun", M/s S.K. Agarwal & Co. (Insurance surveyor & loss assessor), Meerut Cantt., (January 2012).
10. "Expert opinion on ultrasonic and dye penetration tests on two patches of weld deposits on one part of a turbine pivot ring" **M/s Gogoal Hydro Power pvt. ltd.,** E-60, Industrial Area, Haridwar, (July 2012).
11. "Investigation on clutch wheel breakage due to cracking during production/operation", M/s Panalfa Autoelektric Ltd., Begumpur, Khatola, 39th milestone, NH-8 Gurgaon, Haryana, August 2012.

APPENDIX - VII

	Title of Innovations	Profession of Innovator
1.	A two Gear Wheel	Retd. as a senior scientist (Assoc. Director)
2.	Tele Lock	Retd. as a senior scientist (Assoc. Director)
3.	Idea related to health	AM/Health(OS)/4-08/ 3 Proprietor Sarmang Software
4.	Active Tyre - pressure Variation in automobiles, for better traction.	B.Tech I Year, Civil Engineering IIT Roorkee,
5.	Economical empowerment of youth & women of rural area by fruit processing.	Jan Kalyan Samiti, Chatwapipal (Gochar),
6.	Developement of a unique design for scanning systems and plan to have the same patented.	Proprietor, small scale industry
7.	Establishment of the Primary Processing Unit for Medicinal Plants- Brahmi.	Serviceman
8.	Hinge Fitted Flushdoor	Farmer
9.	USB Communication Dongle P/N: USC04	Engineer
10.	Development of a diagnostic kit (strips) for triple infections (tuberculosis, HIV and cysticercosis) in hills of Uttarakhand: A step forward for the primary care level.	Professor, Neurology, Medical College
11.	Digital Valve Controller	Engineer
12.	Evolution of some ayurvedic formulation for their potentiality in the cure and management of diseases like diabetes.	Homeopathy Doctor
13.	Resin from Euphorbia Royleana	Farmer
14.	Remote mobile phone call/ message alert.	Self Employed
15.	Preparation of L.P.G., Gasoline & Petrol from Biogas.	Teacher
16.	Contact less Power Transmission and Generation Device.	Student
17.	Conversion of solar energy into electrical energy through rotation of turbine by heated air.	Student
18.	Development of prototype equipment for dispersion of thoroughly broken agglomerates of inorganic nano particles in viscous fluid	Professor Engineering
19.	Further Development of gravity motor	Engineer
20.	Biochar Briquetting Machine	Self Employed
21.	How Compressive air can be used to move Turbine to produce electricity	Self Employed

22.	Automatic headlight dipper	Student, M. Tech.
23.	Testing of a Herbal Drug (Paeonia emodi) for Toxicity & Efficacy on Hydrocephalus: A Neurological disorder	Faculty Member, University
24.	Lohe ka hal (Related to farming)	Farmer
25.	Biochar briquettes (Green Fuel)	Grass root level innovator
26.	Magnetic engine which can run without fuel	Student, B. Tech,
27.	Printed photovoltaic sheet	Student, Kerala
28.	Electrostatic charge I.C Engine, resolution of fuel	Mukesh Kumar Vidyarthi, Haldwani, Uttarakhand
29.	Isolation of antibacterial terpenoids from the latex of euphorbia by destructive distillation	Student Kotdwar, Uttarakhand
30.	Mood sense	Student, B.Tech, IIT Roorkee Roorkee, Uttarakhand
31.	CARV, Convertible Air and Road Vehicle	Student, Parmal Singh, Punjab
32.	Earthen Air Cooling	Student, IIT Roorkee, Roorkee
33.	Solar Boiler Using Linear Fresnel	Co-Founder /Self employed, Navi Mumbai
34.	Efficient Composting of Biodegradable Wastes through Mesophili Aerobic Rapid Composting (MARC) Continuous Method at Household and Community levels	Chairman , Foundation for Environment and Sanitation Mahavir Enclave, New Delhi 110045
35.	Engineered water Distribution System and Supply System	Industrial, Navi Mumbai
36.	Designing & testing a multipurpose capabilities "wearable Bionic Robotic Suit" Facilitate to support & service for paralysed.	Grass root level innovator, Baghpat, UP
37.	Portable Knowledge Sharing Data Centre	Student, Near, Ganag Gramodyog Smiti, Vill & P.O, Mawakot Haridwar, Kotdwara
38.	Split Compartment Engine Design	Student, IIT Roorkee
39.	Plastic Nuggets from waste Plastic	Student, IIT Roorkee
40.	Automated Toilet Cleaner	Student, IIT Roorkee