Cover Letter

School of Mechanical Engineering,
VIT University,
Chennai, Tamil Nadu, India

March 15, 2021

Selection Committee,
TERI School of Advanced Studies,
New Delhi

Dear Members of the Selection Committee:

I am writing in response to your advertisement for the **Professor position** at TERI School of Advanced Studies, New Delhi as advertised. I am currently a Senior Assistant Professor working with School of Mechanical Engineering, VIT University, Chennai, India.

I respectfully submit this letter of application, for I believe my **past and present experience of teaching, research, and administration**, make me well qualified to meet the needs of the above position at TERI School of Advanced Studies, New Delhi. Further, I am teaching B. Tech courses such as Design of Composite Materials, Heat Treatments, Physical Metallurgy, Phase Diagrams, Materials Science, Metallurgical Thermodynamics, Transport Phenomena, Introduction to Metallurgical and Materials Engineering, Materials Selection and Design, Welding Metallurgy and Materials Testing, and Plastic Shaping Methods etc. Also I am teaching Advanced Non Ferrous Production Metallurgy, Advanced Welding Metallurgy and Communication and Research Skills for M. Tech and Research Methodology for Ph.D students.

I have proposed a research work on **"Fabrication of biodegradable polymer nanocomposite with reinforcement of cellulose nanocrystal (CNC)" to Department of Biotechnology, GoI and partly collaborated with University of Alberta, Canada**. The objective of the work is to produce different blends of aliphatic polyesters with reinforcement of CNCS/CNFS and fabricate a new composite material which have control biodegradability rate and slowly transfer load to the healing bone with required mechanical, thermal and rheological properties. This polymer can fulfill each of these shortcomings, in terms of mechanical properties and degradation time, which restrict its applications.

I have proposed a promising research titled **"Synthesis of fire safe polymer composite with nano ATH and Graphene" to Department of Science and Technology, GoI and partly collaborated with Purdue University, USA**. The work is focused on synthesis of fire safe polymer matrix composite. The objective of the work is to use nano aluminum tri-hydrate and graphene as reinforcement of the composite which are environment friendly and can replace the halogen containing flame retardants without compromising the polymer properties.

I have proposed an interesting research titled **"A sustainable green method of valorizing waste permanent magnets using ionic liquids" to SERB**. The work is focused on the development of a screening model for determining the most suitable IL solvent, synthesis of ionic liquid, extraction of rare earth element from waste permanent magnets and electro-deposition.

I am also preparing research proposal on **green synthesis of silver nanoparticles using flower extract and investigation of their antibacterial and anticancer activity**.

My research work is also covered energy storage materials, and ceramic materials etc. I have submitted one proposal to Govt. of India (AICTE) to modernize the powder metallurgy laboratory.

My research work is covered various **metal extractions in molten salt at high temperature**. I have successfully extracted some metals and alloys such as Ti and Fe-Ti (hydrogen storage material) in required composition. I have succeeded the challenge to **remove the moisture from the molten salt for electrolysis**, as it is hygroscopic in nature. Also, my research work is covered various alloy preparation such as **Fe-Ti (in liquid state) in molten salt at high temperature**. My research includes many equip-mental analyses such as XRD, SEM, EDX, EPMA, XRF, Hot thermocouple, Carbon, and Oxygen analysis etc.

My research work is covered a wide range of topics such as: **Conductor like screening model for real solvents (COSMO-RS) calculation for selective ionic liquids (ILs), solvent extraction of rare earth elements (REEs), selectivity, cyclic voltammetry studies of ferrocene, different ILs, metal-organic complexes etc., and metal deposition of REEs from the metal-organic complex at room temperature and slightly above the room temperature**. My research includes many equip-mental analyses such as Raman, FT-IR, NMR, UV-Vis spectroscopy, ICP-AES, and IC analysis etc. I am in a process to **deposit REEs from waste scrap, and separation process** of different REEs.

As Head, Associate Professor, Assistant Professor, and Post-Doctoral Researcher, I have gained valuable experience leading undergraduate, post graduate and PhD discussion sections for both metallurgy and non-metallurgy areas. In addition, I have advised students on appropriate research topics and edited and evaluated their work. I also developed my experimental set-up, which attracted the students. Also, I am doing some of my research with collaboration and this will help in future. I am firmly dedicated to the research of metallurgy and materials engineering students as well as related areas and eagerly welcome an opportunity to develop similar facilities at TERI School of Advanced Studies, New Delhi.

In the past, I was working for a **reputed research laboratory, pig iron and steel production company and Ferro-alloy production company** as an Assistant Engineer (Metallurgy). In this context I have experience on mineral processing, Blast Furnace operation, and sintering process of iron ore fines in lab scale, pilot scale and large scale plant. The research was done in close collaboration with industry to develop the process with proper characterization with a focus on metals. I was also working for **Govt. of India** as an Assistant Manager (Technical), where **controlling the production, planning, & research for four (4) coin manufacturing units**.

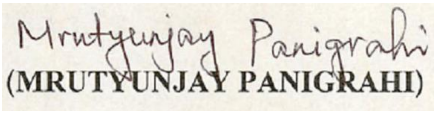
My **teaching and research** work has provided me with the opportunity to draw connections between the different periods and to communicate difficult concepts clearly to **students of all levels**. Normally I focus on **curriculum and technology integration in teaching and my biggest accomplishment is simply the beautiful relationships with the beautiful young students and researchers**. As I have **experience in industry, public sector, academic and research universities**, makes me full of package to meet the needs of TERI School of Advanced Studies, New Delhi.

I have published my research work in some reputed international journals such as Electrochimica Acta, Separation and Purification Technology, Journals of Alloys and Compounds, and Fluid Phase Equilibria etc. as well as participated in some international/national conferences. At the same time I have **reviewed international/bilateral and standard projects for Czech Science Foundation, National Academy of Sciences of Ukraine and several papers** for some reputed International journals.

I am working with people, are from all over the world. So the knowledge about equal opportunity principle is most important for me when working in a group.

I am committed to the **teaching cum research** based on the organization. I emphasize critical thinking and the need to consider the related theory, proper logic and intellectual contexts. I welcome an opportunity to work with your above position. I have enclosed herewith my CV and look forward to hearing from you soon.

Sincerely,



Dr. Mrutyunjay Panigrahi

CURRICULUM VITAE

Dr. Mrutyunjay Panigrahi

Senior Assistant Professor
School of Mechanical Engineering (SMEC),
Vellore Institute of Technology (VIT) – Chennai Campus,
Kelambakkam – Vandalur Road, Rajan Nagar,
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Academic Qualification:

- ✓ **Doctor of Philosophy (PhD)** in **Metallurgy and Materials Engineering/Science** in the **Department of Research Center for Sustainable Science & Engineering (Metallurgy and Recycling System for Metal Resources Circulation)**, **Institute of Multidisciplinary Research for Advanced Materials (IMRAM)**, **Tohoku University**, Sendai, Miyagi, Japan in March, 2013

  Supervisor: *–* ***Prof. Takashi Nakamura, IMRAM, Tohoku University, Sendai, Japan***

- ✓ **Post Graduate Diploma in Management** for Executives **(PGDM)** at **Xavier Institute of Management (XIM)**, Bhubaneswr, Odisha, India in 2010

- ✓ **Master of Technology (M.Tech)** in **Metallurgy (Extractive Metallurgy)** from **Indian Institute of Technology - Banaras Hindu University (IIT-BHU) (formerly Institute of Technology - Banaras Hindu University (IT-BHU))**, Varanasi, Uttar Pradesh, India in 2006

  Supervisor: *–* ***Prof. R. C. Gupta, Ex-Head, Dept. of Met. Engg., IIT-BHU, Varanasi***

  Dr. R. K. Paramguru, Ex-Head, Dept. of Hydro & Electro Met., IMMT-CSIR, Bhubaneswar

- ✓ **Bachelor of Engineering (B.E.)** in **Metallurgy** from **The Indian Institute of Metals (I.I.M)**, Kolkata, West Bengal, India in 2003

- ✓ **Diploma Engineering** in **Metallurgy** from **State Council of Technical Education & Vocational Training (S.C.T.E & V.T)**, Odisha, Bhubaneswar, India in 1999

- ✓ Successfully completed **10+2 examination** from **Council of Higher Secondary Education (C.H.S.E)**, Odisha, Bhubaneswar, India in 1996

- ✓ Successfully completed **10th examination** from **Board of Secondary Education (B.O.S.E),** Odisha, Cuttack, India in 1994

Work Experience:

- ✓ Working as **Senior Assistant Professor** at **School of Mechanical Engineering, Vellore Institute of Technology (VIT), Chennai Campus,** Chennai, Tamil Nadu, India, from June, 2020 to till date.

CURRICULUM VITAE

- ✓ Was working as **Head of the Department (HoD)** and **Associate Professor** at **Department of Metallurgical and Materials Engineering, Indus Institute of Technology & Engineering (IIT&E), Indus University,** Ahmedabad, Gujarat, India, from July, 2018 to June, 2020.

- ✓ Was working as **Associate Professor** at **Department of Metallurgical and Materials Engineering, Indus Institute of Technology & Engineering (IIT&E), Indus University,** Ahmedabad, Gujarat, India, from December, 2017 to July, 2018.

  – **Teaching, Research, and Administration**

- ✓ Was working as **Assistant Professor** at **Department of Metallurgical and Materials Engineering, Bulent Ecevit University (BEU),** Incivez, Zonguldak, Turkey, from April, 2016 to December, 2017.

  – **Teaching, Research, and Administration**

- ✓ Was working as **Post-Doctoral Researcher** at **Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University,** Sendai, Miyagi, Japan, from April, 2013 to March, 2016.

  – **Research**

- ✓ Was working as **Research Scholar** at **Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University,** Sendai, Miyagi, Japan, from October, 2009 to March, 2010.

  – **Research**

- ✓ Was working as **Assistant Manager (Technical)** at **Security Printing and Minting Corporation of India Limited (A Wholly Owned by Govt. of India),** New Delhi, India – **A Mini Ratna Category – I Central Public Sector Unit (CPSE),** under Department of Economic Affairs, Ministry of Finance from January, 2008 to October, 2009.

  – **Administration, Production, Planning, Controlling, Research**

- ✓ Was working as **Assistant Engineer (Metallurgy)** at **Mideast Integrated Steels Ltd. (MESCO STEEL)**, Duburi, Jajpur, Odisha, India – **an Integrated Steel Plant,** from May, 2006 to January, 2008.

  – **Production, Planning, Controlling, Quality**

- ✓ Was working as **Junior Engineer (Metallurgy)** at **Mideast Integrated Steels Ltd. (MESCO STEEL),** Duburi, Jajpur, Odisha, India – **an Integrated Steel Plant,** from August, 2002 to April, 2004.

  – **Production, Planning, Controlling, Quality**

- ✓ Was working as **Apprentice Trainee (Metallurgy)** at **Institute of Minerals and Materials Technology (IMMT) (C.S.I.R.)**, Bhubaneswar, Odisha, India from 30/08/2001 to 29/08/2002.

CURRICULUM VITAE

– **Research**

- ✓ Was working as **Production Trainee (Metallurgy)** at **Kalinga Refractories,** Bhubaneswar, Odisha, India – **a Ferro Alloy Plant**, from August, 1999 to August, 2001.

– **Production, Planning, Controlling, Quality**

Project Applied:

1. **Liquid–liquid extraction of neodymium ions from aqueous solutions of $NdCl_3$ by phosphonium-based ionic liquids (Project Department, Bulent Ecevit University, Turkey)** – 2016-YKD-73338635-02 – 2017 (completed)

2. **Fabrication of biodegradable polymer nano-composites with green plants derive carbon nanotube (CNT) through additive manufacturing (Jointly working with Indus University, Ahmedabad and University of Alberta, Canada), project submitted to Science and Engineering Research Board (SERB)** – 2020 (submitted)

3. **Synthesis of fire safe polymer composite with nano aluminum trihydrate (ATH) and graphene (Jointly working with Indus University, Ahmedabad and Purdue University, USA), project submitted to Science and Engineering Research Board (SERB)** – 2020 (submitted)

4. **Modernization and removal of obsolescence (MODROB) proposal for Powder Metallurgy Laboratory (Project submitted to AICTE, New Delhi)** – 2019 (submitted)

Supervised Bachelors degree students projects:

1. Centrifugal casting of aluminum bronze (Supervisor) (1 student)

2. Synthesis of FeTi based alloy for hydrogen storage by mechanical alloying at low pressure (Supervisor) (2 students)

3. Fabrication of multifunctional graphene based supercapacitor (Supervisor) (1 student)

4. Synthesis of silica nano particles by sol gel method for water repellant applications (Supervisor) (1 student)

5. Optimization of the activated flux usage in tungsten inert gas welding process for improvement of weld penetration (Co-Supervisor) (3 students)

6. Study the effect of alloying elements on Aluminum alloys on its mechanical properties (Co-Supervisor) (3 students)

7. Synthesis of piezoelectric material (Co-Supervisor) (3 students) – Best B. Tech Project under UDP – 2018

Students Supervised:

1. PhD – 04 (Continuing)

2. Masters – 02 (Completed)

3. Bachelors – 22 (Completed)

Course taught:

Doctor of Philosophy (Ph. D) courses (Indus University, India):-

Academic year	Year/Semester	Course name	Course credits	Total course hours
2017–2018	$1^{st}/1^{st}$	Research Methodology (REN–0101)	4	40
2018–2019				
2019–2020				
	$1^{st}/2^{nd}$	Advanced Non-Ferrous Extractive Metallurgy		
		Experimental and Quantitative Techniques		

Master's degree courses (Indus University, India):-

Academic year	Year/Semester	Course name	Course credits	Total course hours
2018–2019	$1^{st}/1^{st}$ (Odd)	Advanced Welding Processes (IM–0104)	5	40
		Advanced Welding Processes Lab. (IM–0104)	-	20
		Communication and Research Skills (IM–0105)	3	38
	$1^{st}/2^{nd}$ (Even)	Advances in Heat Treating Practices (IM–0202)	5	40
		Advances in Heat Treating Practices Lab. (IM–0202)	-	20
		Advanced Non Ferrous Production Metallurgy (IM–0209)	3	38

Bachelor's degree courses (Indus University, Ahmedabad and VIT, Chennai, India):-

Academic year	Year/Semester	Course name	Course credits	Total course hours
2017–2018	$1^{st}/2^{nd}$ (Even)	Materials Science (MT–0001)	3	38
	$2^{nd}/4^{th}$ (Even)	Transport Phenomena (MT–0403)	5	38
		Metallurgical Thermodynamics (MT–0404)	4	38
2018–2019	$3^{rd}/5^{th}$ (Odd)	Heat Treatment Principles and Practices (MT–0501)	5	38
	$4^{th}/7^{th}$ (Odd)	Metal Joining Processes (MT–0701)	4	38
	$2^{nd}/4^{th}$ (Even)	Metallurgical Thermodynamics (MT–0404)	4	38
2019–2020	$1^{st}/1^{st}$ (Odd)	Materials Science (MME–0101)	3	38
	$2^{nd}/3^{rd}$ (Odd)	Metallurgical Thermodynamics (MME–0303)	4	38
	$2^{nd}/4^{th}$ (Even)	Introduction to Process Metallurgy (MME–0401)	4	38
	$3^{rd}/6^{th}$ (Even)	Electrometallurgy and Corrosion (MT–0602)	5	38

2020–2021	Fall	New Product Development	2	30
	Fall	Fluid Mechanics Lab.	-	
	Winter	Design of Composite Materials	3	
	Winter	Mechanics of Machines Lab.	-	

Bachelor's degree courses (Bulent Ecevit University, Turkey):-

Academic year	Year/Semester	Course name	Course credits	Total course hours
2016–2017	$1^{st}/1^{st}$ (Autumn)	Introduction to Metallurgical and Materials Engineering (MMM–101)	6	42
	$3^{rd}/5^{th}$ (Autumn)	Heat Treatment (MMM–305)	5	56
	$2^{nd}/4^{th}$ (Spring)	Phase Diagram (MMM–206)	5	42
2017–2018	$1^{st}/1^{st}$ (Autumn)	Introduction to Metallurgical and Materials Engineering (MMM–101)	6	42
	$3^{rd}/5^{th}$ (Autumn)	Physical Metallurgy (MMM–301)	5	42
		Heat Treatment (MMM–305)	5	56
		Welding Metallurgy and Materials Testing (MMM–315)	5	42
	$4^{th}/7^{th}$ (Autumn)	Materials Selection and Design (MMM–401)	5	56
		Plastic Shaping Methods (MMM–421)	6	42

Committee member in Universities:

1. **Member of the reviewer board in journal Crystals**

2. **Member of Doctoral Progress Committee (DPC) at School of Technology (SOT), Pandit Deendayal Petroleum University (PDPU)**, Gandhinagar, Gujarat

3. **Member of Academic Council, Indus University**, Ahmedabad, Gujarat

4. **Member of Board of Examination and Results (BOER), Indus University**, Ahmedabad, Gujarat

5. **Member of Departmental Research Committees (DRCs) of Mechanical Sciences Group consisting of Mechanical Engineering, Civil Engineering, Automobile Engineering and Materials and Metallurgical Engineering, Indus University**, Ahmedabad, Gujarat

Committee member in Conferences:

1. **Session Chair, 28th International Conference on Processing and Fabrication of Advanced Materials (PFAM28) organized by Vellore Institute of Technology, Chennai, Tamil Nadu, India between 7–8th December, 2020**

2. **Session Co–Chair of Invited talk, International conference on Current Trends and Future Challenges in Education (ICTFCE) organized by Vellore Institute of Technology in Collaboration with University of Leicester and ICT Academy, Chennai, Tamil Nadu, India between 7–9th October, 2020**

3. **Convenor of GUJCOST sponsored workshop Advanced Energy Materials and Storage Technology organized by Department of Materials and Metallurgical Engineering, Institute of Technology and Engineering, Indus University, Ahmedabad, Gujarat, India between 07–09th April, 2020**

4. **Organizing member of International conference on Sustainable Technologies for Desalination and National Water Mission and Annual Congress of InDA (InDACON-2020) organized by Indus University, Ahmedabad, Gujarat, India between 13–15th February, 2020**

5. **Session Chair of symposia on Industrial Wastewater Treatment and Zero Liquid Discharge, International conference on Sustainable Technologies for Desalination and National Water Mission and Annual Congress of InDA (InDACON-2020) organized by Indus University, Ahmedabad, Gujarat, India between 13–15th February, 2020**

6. **Convenor of Fronius India Pvt. Ltd. Sponsored workshop Advanced Welding Technology jointly organized by Department of Materials and Metallurgical Engineering, Institute of Technology and Engineering, Indus University, Ahmedabad, Gujarat and Fronius India Pvt. Ltd., Pune on 05th February, 2020**

7. **Convenor of International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019) endorsed by Materials Research Society (MRS), Singapore and Indus University, Ahmedabad, Gujarat, India between 15–18th December, 2019**

8. **Session Chair of symposia on Energy Storage, International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019) endorsed by Materials Research Society (MRS), Singapore and Indus University, Ahmedabad, Gujarat, India between 15–18th December, 2019**

9. **International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019) endorsed by Materials Research Society (MRS), Singapore and Indus University, Ahmedabad, Gujarat, India between 15–18th December, 2019 (International Scientific Committee)**

10. **Convenor of GUJCOST sponsored workshop Innovation in Biomaterials organized by Department of Materials and Metallurgical Engineering, Institute of Technology and Engineering, Indus University, Ahmedabad, Gujarat, India between 19–21st December, 2019**

11. **Convenor of workshop Corrosion and it's Advanced Nano Mitigation organized by Department of Materials and Metallurgical Engineering, Institute of Technology and Engineering, Indus University, Ahmedabad, Gujarat, India between 19–23rd December, 2019**

12. **Convenor of The Institution of Engineers (India) sponsored Seminar, Challenges and Research Opportunities in Composite Materials, jointly organized by Department of Materials and Metallurgical Engineering, Institute of Technology and Engineering, Indus University, Ahmedabad, Government Engineering College, Gandhinagar, Gujarat and The Institution of Engineers (India), Gujarat chapter, India on 24th September, 2019**

13. **3rd Engineers of Future International Student Symposium (EFIS 2019), organized by Faculty of Engineering, Bulent Ecevit University, Zonguldak, Turkey between 16–17th May, 2019 (Science Committee)**

14. **International Conference on Recent Advances in Materials, Mechanical and Civil Engineering (ICRAMMCE-2018), organized by Marri Laxman Reddy Institute of Technology and Management, Hyderabad, India between 19–20th November, 2018 (Technical Committee)**

15. **1st Engineers of Future International Student Symposium (EFIS 2017), organized by Faculty of Engineering, Bulent Ecevit University, Zonguldak, Turkey between 15–17th June, 2017 (Science Committee)**

16. **International Conference on Recent Advances in Materials, Mechanical and Civil Engineering (ICRAMMCE-2017), organized by Marri Laxman Reddy Institute of Technology and Management, Hyderabad, India between 1–2nd June, 2017 (Technical Committee)**

Proposal Reviewer/ Reviewer of Journal:

1. **Czech Science Foundation** – The grant agency of the Czech Republic (Independent institution to support basic scientific research) – The Agency's task is the provision of grants to the best projects from all scientific disciplines, which are selected every year through a public competition in research and development

   – **International/Bilateral Project – 1**

   – **Standard Project – 1**

2. **Metals and Materials International**

3. **Separation and Purification Technology**

4. **ACS Applied Materials & Interfaces**

5. **ACS Sustainable Chemistry & Engineering**

6. **JOM-The Journal of The Minerals, Metals & Materials Society (TMS)**

7. **Industrial & Engineering Chemistry Research**

8. **African Journal of Agricultural Research**

9. **International Journal of Water Resources and Environmental Engineering**

10. **Ionics**

11. **International Journal of Energy Research**

12. **Journal of Chemical Technology & Biotechnology**

13. **Metals**
14. **Resource-Efficient Technologies**
15. **International Journal of Physical Sciences**
16. **Journal of Material Cycles and Waste Management**
17. **Ceramics International**
18. **Transactions of Nonferrous Metals Society of China**
19. **Journal of Dispersion Science and Technology**
20. **Journal of Food Process Engineering**
21. **Chemical Engineering Communications**
22. **Current Organocatalysis**
23. **Crystals**
24. **Symmetry**
25. **Molecules**
26. **Separation Science and Technology**
27. **Physical Chemistry Chemical Physics (RSC)**

Publications in Referred International Journals:

1. Dmytro Kozak, **Mrutyunjay Panigrahi**, Mariusz Grabda, Etsuro Shibata, and Takashi Nakamura, **"Electroreduction of neodymium via carrier electrolyte of CyphosIL-101/EtOH-2M(HCl)EtOH at room temperature"** (in preparation)

2. **Mrutyunjay Panigrahi**, Aarti Kumari, Etsuro Shibata, and Takashi Nakamura, **"Extraction of praseodymium ions from $PrCl_3$ aqueous solutions using tryhexyl(tetradecyl)phosphonium benzoate ionic liquid as extraction medium"** (in preparation)

3. Arunkumar Dorai, **Mrutyunjay Panigrahi**, Grabda Mariusz, Dmytro Kozak, Shibata Etsuro, Junichi Kawamura, and Takashi Nakamura, **"Nuclear magnetic resonance as a tool to evaluate the extraction mechanism of lanthanide complexes"** (in preparation)

4. **Mrutyunjay Panigrahi**, Dmytro Kozak, Mariusz Grabda, Aarti Kumari, Etsuro Shibata, and Takashi Nakamura, **"Solvent extraction of Nd(III) from $NdCl_3$ aqueous solutions by trihexyl(tetradecyl)phosphonium bis(2,4,4-trimethylpentyl)phosphinate and trihexyl(tetradecyl)phosphonium decanoate ionic liquids"** (in preparation)

5. **Mrutyunjay Panigrahi**, Mariusz Grabda, Dmytro Kozak, Arunkumar Dorai, Etsuro Shibata, Junichi Kawamura, and Takashi Nakamura, **"Liquid–liquid extraction of neodymium ions from aqueous solutions of $NdCl_3$ by phosphonium-based ionic liquids"**, **Separation and Purification Technology**, 171, 263–269 (2016)

6. Dorai Arunkumar, **Mrutyunjay Panigrahi**, Dmytro Kozak, Mariusz Grabda, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, **"Effect of Paramagnetic Metal Ions on ^1H Diffusion in Tryhexyltetradecylphosphonium Benzoate Ionic Liquid"**, **ECS Transactions**, 75 (15), 567–573 (2016)

7. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura**, "Predictive Model for Ionic Liquid Extraction Solvents for Rare Earth Elements"**, **AIP Conference Proceedings**, 1702, 190004–1–4 (2015)

8. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Franck Eckerte, Etsuro Shibata, and Takashi Nakamura, **"Theoretical selection of most effective ionic liquids for liquid–liquid extraction of NdF_3"**, **Computational & Theoretical Chemistry**, 1061, 72–79 (2015)

9. Dmytro Kozak, **Mrutyunjay Panigrahi**, Mariusz Grabda, Etsuro Shibata, and Takashi Nakamura, **"Ferrocene redox in trihexyl(tetradecyl)phosphonium bis-2,4,4-(trimethylpentyl) phosphinate (Cyphos IL-104)/ethanol at glassy carbon and platinum working electrodes"**, **Electrochimica Acta**, 163, 41–47 (2015)

10. Mariusz Grabda, **Mrutyunjay Panigrahi**, Sylwia Oleszek, Dmytro Kozak, Franck Eckerte, Etsuro Shibata, and Takashi Nakamura, **"COSMO-RS screening for efficient ionic liquid extraction solvents for $NdCl_3$ and $DyCl_3$"**, **Fluid Phase Equilibria**, 383, 134–143 (2014)

11. **Mrutyunjay Panigrahi**, Etsuro Shibata, Atsushi Iizuka and Takashi Nakamura, **"Production of Fe–Ti alloy from mixed ilmenite and titanium dioxide by direct electrochemical reduction in molten calcium chloride"**, **Electrochimica Acta**, 93, 143–151 (2013)

12. **Mrutyunjay Panigrahi**, Atsushi Iizuka, Etsuro Shibata and Takashi Nakamura, **"Electrolytic Reduction of Mixed (Fe, Ti) Oxide Using Molten Calcium Chloride Electrolyte"**, **Journal of Alloys and Compounds**, 550, 545–552 (2013)

13. **Mrutyunjay Panigrahi**, Raja Kishore Paramguru, Ramesh Chandra Gupta, Etsuro Shibata and Takashi Nakamura, **"An Overview of Production of Titanium and an Attempt to Titanium Production with Ferro-Titanium", High Temperature Materials and Processes**, Vol. 29, Nos. 5–6, p. 495–513 (2010)

International Conference Proceedings (Full Paper):

1. Dorai Arunkumar, **Mrutyunjay Panigrahi**, Dmytro Kozak, Mariusz Grabda, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, **"Effect of Paramagnetic Metal Ions on ^1H Diffusion in Tryhexyltetradecylphosphonium Benzoate Ionic Liquid"**, **Pacific Rim Meeting on Electrochemical and Solid-State Science (PRiME 2016/230th ECS Meeting)**, 75 (15), 567–573 (2016)

2. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura**, "Predictive Model for Ionic Liquid Extraction Solvents for Rare Earth Elements"**, **11th International Conference of Computational Methods in Sciences and Engineering (ICCMSE 2015)**, 1702, 190004 (2015)

3. M. Grabda, S. Oleszek, **M. Panigrahi**, D. Kozak, E. Shibata, T. Nakamura, **"Ionic Liquids Extraction Solvents of Rare Earth Elements from Industrial Scraps: Theoretical Considerations"**, **5th International Conference on Engineering for Waste and Biomass Valorization**, 1429–1443 (2014)

4. **Mrutyunjay Panigrahi**, Etsuro Shibata, Atsushi Iizuka, and Takashi Nakamura, **"Fe–Ti Alloy Production from Mixed Ilmenite and Titanium Dioxide by Direct Electrolytic Reduction in Molten Calcium Chloride Electrolyte"**, **The 8th Pacific Rim International Conference on Advanced Materials and Processing (PRICM8)**, p. 2331–2343 (2013)

5. **Mrutyunjay Panigrahi**, Atsushi Iizuka, Etsuro Shibata, and Takashi Nakamura, **"FeTi Alloy Production by Electrolytic Reduction of (Fe, Ti) Oxide Electrode in Molten Calcium Chloride"**, **T. T. Chen Honorary Symposium on Hydrometallurgy, Electrometallurgy and Materials Characterization, The Minerals, Metals & Materials Society (TMS)**, p. 275–284 (2012)

Key Note Lectures/Invited Talks:

1. **Mrutyunjay Panigrahi**, **"Electrodeposition of Rare Earth Elements from Aqueous Media", Online Short Term Training Program on Advances in Corrosion Engineering and Electrochemical Characterization Techniques**, 2–6th January, 2021, **Department of Metallurgical and Materials Engineering, National Institute of Technology**, Raipur, Chhattisgarh, India (Oral) **– Invited Talk**

2. **Mrutyunjay Panigrahi**, **"Screening of effective ionic liquids for liquid–liquid extraction of rare earth elements", International Conference on Recent Advances in Metallurgy for Sustainable Development (IC-RAMSD 2018)**, 1–3rd February, 2018, The Maharaja Sayairao University of Baroda (MSU), Baroda, Gujarat, India (Oral) **– Key Note Lecture**

3. M. Grabda, **M. Panigrahi**, D. Kozak, E. Shibata, and T. Nakamura, **"Study of extraction properties of ionic liquids with COSMO-RS"**, **The 11th General Meeting of ACCMS-VO (Asian Consortium on Computational Materials Science – Virtual Organization)**, 19–21st December, 2016, Tohoku University, Sendai, Japan (Oral) **– Invited Talk**

4. **Mrutyunjay Panigrahi**, Mariusz Grabda, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura, **"Ionic Liquid Extraction of Rare Earth Metals", The 6th International Workshop on Industrial Technology of Rare Metals**, 10th December, 2014, Jeju Island, South Korea (Oral) **– Invited Talk**

International Conferences and Workshop:

CURRICULUM VITAE

1. Jyotiprakash Das and **Mrutyunjay Panigrahi**, **"Plastic bricks – A solution to the single used waste plastic", 11th International conference on Advancements in Polymeric Materials (APM – 2020)**, 13–15th February, 2020, Bengaluru, India (Oral)

2. Shivam Salunkhe, Manas Ranjan Majhi and **Mrutyunjay Panigrahi**, **"Preparation of 3–dimensional graphene foam based supercapacitor", International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019)**, 15–18th December, 2019, Ahmedabad, India (Oral)

3. Rakesh Pani, Animesh Mandal, Sayad Amanulla and **Mrutyunjay Panigrahi**, **"Synthesis and characterization of high strength light weight aluminum matrix composite reinforced with rice husk derived silica", International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019)**, 15–18th December, 2019, Ahmedabad, India (Oral)

4. Jyotiprakash Das, Sumit Senapati, Sudhanshu Bhusan Panda and **Mrutyunjay Panigrahi**, **"Fabrication of polypropylene matrix composite reinforced with rice husk ash", International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019)**, 15–18th December, 2019, Ahmedabad, India (Oral)

5. Roshan Rana, **Mrutyunjay Panigrahi**, Niraj Pandey and Manas Ranjan Majhi **"Synthesis and characterization of coating and corrosion behavior of alumina borate whiskers", International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019)**, 15–18th December, 2019, Ahmedabad, India (Poster)

6. Subhasis Das Gupta and **Mrutyunjay Panigrahi**, **"Defect in rolled product and their remedies", International conference on Frontiers in Materials Processing, Applications, Research and Technology (FiMPART 2019)**, 15–18th December, 2019, Ahmedabad, India (Poster)

7. Shivam Salunkhe, Manas Ranjan Majhi and **Mrutyunjay Panigrahi**, **"Fabrication of multifunctional graphene based supercapacitor", International Conference on Advanced Materials and Processes for Defence Applications (ADMAT 2019)**, 23–25th September, 2019, Hyderabad, India (Poster and Innovation Pavilion)

8. Jaykumar Pareshkumar Suthar, Gaurav Avasthi, and **Mrutyunjay Panigrahi**, **"Preparation of silica nano-particles using Sol-Gel method for super hydrophobic coating", International Conference on Recent Advances in Metallurgy for Sustainable Development (IC-RAMSD 2018)**, 1–3rd February, 2018, The Maharaja Sayairao University of Baroda (MSU), Baroda, Gujarat, India (Oral)

9. **Mrutyunjay Panigrahi**, **"Solvent extraction of Nd(III) from aqueous solution of $NdCl_3$ by $[T_{66614}][BA]$ ionic liquid"**, **ILSEPT – 3rd International Conference on Ionic Liquids in Separation and Purification Technology"**, 8–11th January, 2017, Kuala Lumpur, Malaysia (Oral)

10. Ekrem Akca, Baris Avar, and **Mrutyunjay Panigrahi**, **"Study on Hot-Dip Galvanizing Process of Hot-Rolled High-Strength Steels"**, **1st International Mediterranean Science and**

Engineering Congress (IMSEC 2016)", 26–28th October, 2016, Cukurova University, Adana, Turkey (Poster)

11. A. Dorai, **M. Panigrahi**, D. Kozak, M. Grabda, E. Shibata, T. Nakamura, and J. Kawamura, **"Effect of Paramagnetic Metal Ions on ^{1}H Diffusion in Tryhexyltetradecylphosphonium Benzoate Ionic Liquid"**, **Pacific Rim Meeting on Electrochemical and Solid-State Science (PRiME 2016/230th ECS Meeting)**, 2–7th October, 2016, Honolulu, Hawaii, USA (Oral)

12. Ekrem Akca, Baris Avar, and **Mrutyunjay Panigrahi**, **"Influence of Substrate Surface Conditions on Galvanizing Behaviour of High Strength Hot Rolled Steels"**, **2nd International Congress on the World of Technology and Advanced Materials (WITAM–2016)**, 28th September–2nd October, 2016, Evran University, Kirsehir, Turkey (Poster)

13. Dmytro Kozak, **Mrutyunjay Panigrahi**, Mariusz Grabda, Dorai Arunkumar, Etsuro Shibata, Junichi Kawamura, and Takashi Nakamura, **"Electrorecovery of Neodymium Ions from Cyphos®IL-101/Ethanol Electrolyte Containing Hydrogen Chloride at Room Temperature"**, **Electrochem 2016**, 17–19th August, 2016, University of Leicester, Leicester, UK (Oral)

14. Mariusz Grabda, **Mrutyunjay Panigrahi**, Dmytro Kozak, Franck Eckert, Etsuro Shibata, and Takashi Nakamura, **"Ionic liquids for "clean" liquid-liquid extraction of rare earths metals – computational selection and insight into extraction mechanism"**, **International Conference on Green Chemistry and Sustainable Engineering**, 21–22nd July, 2016, Rome, Italy (Oral)

15. Mariusz Grabda, **Mrutyunjay Panigrahi**, Dmytro Kozak, Franck Eckert, Etsuro Shibata, and Takashi Nakamura, **"Ionic Liquids for Liq-Liq Extraction of rare earth elements"**, **ALTA 2016**, 21–28th May, 2016, Perth, Australia (Oral)

16. Dorai Arunkumar, **Mrutyunjay Panigrahi**, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, **"Evaluation of the IL extraction mechanism of rare earth through NMR spectroscopy"**, **3rd International Conference on Ionic Liquid-based Materials (ILMAT-III)**, 8–11th December, 2015, Berlin, Germany (Oral)

17. Dmytro Kozak, **Mrutyunjay Panigrahi**, Mariusz Grabda, Etsuro Shibata, and Takashi Nakamura, **"Study of Cyphos IL-104/ethanol as Supporting Electrolyte for Determination of the Ferrocene Redox Potential at Glassy Carbon and Platinum Working Electrodes"**, **Critical Metal Symposium**, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan (Poster)

18. Dorai Arunkumar, Yoshiki Iwai, **Mrutyunjay Panigrahi**, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, **"^{1}H MRI of Ionic Liquid - Rare Earth Complex"**, **Critical Metal Symposium**, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan (Poster)

19. Dorai Arunkumar, **Mrutyunjay Panigrahi**, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, **"^{1}H NMR Studies on complexes of Rare Earth Ions with Phosphonium Based Ionic Liquid"**, **Critical Metal Symposium**, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan (Poster)

20. **Mrutyunjay Panigrahi**, Mariusz Grabda, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura, **"Liquid–liquid Extraction of Rare Earth Metal Ions from Aqueous Solution in Phosphonium Based Ionic Liquids"**, **Critical Metal Symposium**, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan (Poster)

21. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Franck Eckert, Etsuro Shibata, and Takashi Nakamura, **"Theoretical Selection of Ionic Liquids for L-L Extraction of Nd and Dy"**, **Critical Metal Symposium**, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan (Poster)

22. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura, **"Screening of Ionic Liquids for Extraction of Neodymium and Dysprosium in aqueous solution"**, **"4th Korea-Japan Rare Metal Workshop"**, 3rd September, 2015, Sendai, Japan (Oral)

23. Mariusz Grabda, Sylwia Oleszek, Dmytro Kozak, **Mrutyunjay Panigrahi**, Etsuro Shibata, and Takashi Nakamura, **"Extraction of neodymium from aqueous phase to preselected ionic liquids – Insights from quantum chemical calculations"**, **Iberoamerican Meeting on Ionic Liquids (IMIL 2015)**, 2–3rd July, 2015, Madrid, Spain (Oral)

24. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Franck Eckert, Etsuro Shibata, and Takashi Nakamura, **"Theoretical pre-selection of ionic liquids for liquid-liquid extraction of Neodymium"**, **X Iberoamerican Conference on Phase Equilibria and Fluid Properties for Process Design** (EQUIFASE 2015), 28th June–1st July, 2015, Alicante, Spain (Oral)

25. **Mrutyunjay Panigrahi**, Dmytro Kozak, Mariusz Grabda, Etsuro Shibata, and Takashi Nakamura, **"Study on the liquid–liquid extraction of neodymium ion from $NdCl_3$ aqueous solution using trihexyl-tetradecyl-phosphonium benzoate ionic liquid"**, **3rd International Symposium on Green Chemistry (ISGC 2015**), 3–7th May, 2015, La Rochelle, France (Poster)

26. Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura, **"Predictive Model for Ionic Liquid Extraction Solvents for Rare Earth Elements"**, **11th International Conference of Computational Methods in Sciences and Engineering (ICCMSE 2015)**, 20–23rd March, 2015, Athens, Greece (Oral)

27. Etsuro Shibata, Mariusz Grabda, **Mrutyunjay Panigrahi**, Dmytro Kozak, and Takashi Nakamura, **"Screening of Effective Ionic Liquid for Extraction of Rare Earth Elements"**, **The 10th Workshop on Reactive Metal Processing (RMW10)**, 20–21st March, 2015, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA (Oral)

28. M. Grabda, S. Oleszek, **M. Panigrahi**, D. Kozak, E. Shibata, and T. Nakamura**, "Prediction of effective ionic liquids extraction solvents by COSMO-RS", 4th Asia-Pacific Conference on Ionic Liquids and Green Processes / 6th Australasian Symposium on Ionic Liquids (APCIL-4/ASIL-6 2014)**, 28th September–1st October, 2014, Sydney, Australia (Oral)

29. **M**. Grabda, S. Oleszek, **M. Panigrahi**, D. Kozak, E. Shibata, and T. Nakamura, **"Ionic Liquids Extraction Solvents of Rare Earth Elements from Industrial Scraps:**

Theoretical Considerations", 5th International Conference on Engineering for Waste and Biomass Valorization, 25–28th August, 2014, Rio de Janeiro, Brazil (Oral)

30. M. Grabda, S. Oleszek, **M. Panigrahi**, D. Kozak, E. Shibata, and T. Nakamura, **"Application of COSMO-RS computations for prediction of optimal ionic liquids extraction solvents for rare earth elements", 2nd International Conference on Ionic Liquids in Separation and Purification Technology**, 29th June–2nd July, 2014, The Westin Harbour Castle, Toronto, Canada (Poster)

31. **Mrutyunjay Panigrahi**, Etsuro Shibata, Atsushi Iizuka, and Takashi Nakamura, **"Fe–Ti Alloy Production from Mixed Ilmenite and Titanium Dioxide by Direct Electrolytic Reduction in Molten Calcium Chloride Electrolyte", The 8th Pacific Rim International Conference on Advanced Materials and Processing (PRICM8)**, 4–9th August, 2013, Hilton Waikoloa Village, Waikoloa, Hawaii, USA (Oral)

32. **Mrutyunjay Panigrahi**, Etsuro Shibata, Atsushi Iizuka, and Takashi Nakamura, **"Electrochemical De-oxidation of Mixed Oxides to Fe–Ti Alloy in Molten Calcium Chloride Electrolyte", The 8th Workshop on Reactive Metal Processing (RMW8)**, 8–9th March, 2013, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA (Oral)

33. **Mrutyunjay Panigrahi**, Atsushi Iizuka, Etsuro Shibata, and Takashi Nakamura, **"FeTi Alloy Production by Electrolytic Reduction of (Fe, Ti) Oxide Electrode in Molten Calcium Chloride"**, **The 7th Workshop on Reactive Metal Processing (RMW7)**, 16–17th March, 2012, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA (Poster)

34. **Mrutyunjay Panigrahi**, Atsushi Iizuka, Etsuro Shibata, and Takashi Nakamura, **"FeTi Alloy Production by Electrolytic Reduction of (Fe, Ti) Oxide Electrode in Molten Calcium Chloride"**, **The Minerals, Metals & Materials Society (TMS)**, 11–15th March, 2012, TMS 2012 141st Annual Meeting & Exhibition, Walt Disney World, Swan & Dolphin Resort, Orlando, FL, USA (Oral)

National Conferences and Workshop:

1. Jyotiprakash Das, Animesh Mandal, Syed Amanulla and **Mrutyunjay Panigrahi**, "**Synthesis and characterization of high strength light weight aluminum matrix composite reinforced with rice husk ash derived silica and copper"**, **National Conference on Trends in Minerals and Materials Technology (MMT–2019)**, 30th October, 2019, Biofuels and Bio Processing Research Centre (BBRC), SOA University, Bhubaneswar, Odisha, India (Oral – 3rd Prize winner)

2. **Mrutyunjay Panigrahi**, Atsushi Iizuka , Etsuro Shibata, and Takashi Nakamura, **"An Investigation into Electrolytic Reduction of Mixed Titanium Dioxide and Iron Oxide Precursors in Molten Calcium Chloride"**, **Abstracts of 11th Meeting of Institute of Multidisciplinary Research for Advanced Materials (IMRAM)**, **Tohoku University**, 8th December, 2011, Katahira Sakura Hall , Sendai, Miyagi, Japan (Poster)

3. **Mrutyunjay Panigrahi**, Atsushi Iizuka , Etsuro Shibata, and Takashi Nakamura, **"Electrolytic Reduction of Mixed Titanium Dioxide and Iron Oxide Precursors in Molten Calcium Chloride"**, **The Mining and Materials Processing Institute of Japan (MMIJ)**, 26–29th September, 2011, Osaka Prefecture University, Sakai, Osaka, Japan (Poster)

4. **Mrutyunjay Panigrahi**, Atsushi Iizuka , Etsuro Shibata, and Takashi Nakamura, **"Preparation of Electrode for Direct Electrolytic Reduction to Produce Ferro-Titanium"**, **The Mining and Materials Processing Institute of Japan (MMIJ)**, **Tohoku Branch**, 24th June, 2011, Tohoku University, Sendai, Miyagi, Japan (Poster)

Achievements:

1. Qualified **Test of English as a Foreign Language - Institutional Testing Program (TOEFL – ITP) – 2009**

2. Qualified **Japanese Government (Monbukagakusho : MEXT) scholarship – 2009**

3. 4th merit rank in **Master of Technology (M.Tech)** in **Metallurgy (Extractive Metallurgy (merit rank – 02))** from **Indian Institute of Technology - Banaras Hindu University (IIT–BHU)**, Varanasi, Uttar Pradesh, India

4. **Ministry of Human Resource Development (HRD)**, **Government of India scholarship** in 2004–2006

5. Qualified **Graduate Aptitude Test in Engineering (GATE) – 2004** with **91.36 percentile** and **All India Rank (AIR) – 85**

6. Qualified **Odisha Joint Entrance Examination (OJEE : Lateral Entry) – 2000** with **All Odisha Rank – 12**

7. 9th all Odisha merit rank in **Diploma Engineering** in **Metallurgy from State Council of Technical Education & Vocational Training (S.C.T.E & V.T)**, Odisha, India

Thesis/Project Done:

- **Ph. D Thesis - "Direct Electrolytic Reduction of Mixed Oxides to Fe–Ti Alloy in Molten Calcium Chloride" at Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, Sendai, Miyagi, Japan**

- **M. Tech Thesis - "Preparation of TiO_2 electrode for direct Electrolytic reduction to produce Titanium and Ferrotitanium" at Indian Institute of Technology - Banaras Hindu University (IIT- BHU), Varanasi, Uttar Pradesh, India with Institute of Minerals and Materials Technology (IMMT) (Formerly Regional Research Laboratory (RRL)) (C.S.I.R.) Bhubaneswar, Odisha, India**

- **B.E Project - "Agglomeration of Iron Ore fines by Sintering technique using pot grate furnace"** at **Institute of Minerals and Materials Technology (IMMT)**, Bhubaneswar, Odisha, India

- **Diploma Project - "Determination of Hardenability by Jominy-end-Quench test"** at **Kalinga Institute of Industrial Technology (KIIT) (Deemed University)**, Bhubaneswar, Odisha, India

Computer Training:

- ✓ **Post Diploma in Computer Application (PDCA)** at **Bhubanananda Orissa School of Engineering (B.O.S.E)** under **State Council of Technical Education & Vocational Training (S.C.T.E & V.T)**, Odisha, Bhubaneswar, India

CURRICULUM VITAE

- ✓ Computer Training on **Office Assistance** course at **Bharatiya Vidya Bhawan (BVB)**, Bhubaneswar, Odisha, India

Other Training & Inspection:

- ❖ **Inspection of Coining Presses & Blanking Lines and Basic Training for Blanking Line at M/s Schuler Pressen GmbH & Co. KG, Goppingen, Germany**

- ❖ **Inspection of Coin Blanks at M/s Jindal Stainless Limited, Hisar, Haryana, India**

Special Equipment Operation:

1. Optical Microscope (OM)

2. X-ray Diffraction (XRD)

3. Desktop X-ray Diffracto-meter

4. Scanning Electron Microscopy (SEM)

5. Energy-Dispersive X-ray Spectroscopy (EDX)

6. X-ray Fluorescence Spectrometry (XRF)

7. Ion Chromatography (IC)

8. Oxygen Analyzer

9. Carbon Analyzer

10. Loresta-GP- High Precision Resistivity Meter

11. Relative Surface Area Analyzer

12. Hot Thermocouple Measuring Unit

13. Thermo-gravimetric Analysis (TG)/ Differential Thermal Analysis (DTA)

14. Differential Scanning Calorimetry (DSC)

15. Particle Size Analyzer

16. Raman Spectroscopy

17. Fourier transform infrared spectroscopy (FTIR)

18. Uv-Vis Spectroscopy

Industry and Laboratory Visit:

- Visit to **TATMETAL Steel Industry and Trade A. S**, Hamzafakihli Mah., Eregli, Zonguldak, Turkey – **a Galvanizing Company**

- Visit to **Obal Aluminum**, Hamzafakihli Mah., Eregli, Zonguldak, Turkey – **an Aluminum Company**

- Visit to **Erdemir**, Kestaneci, Eregli, Zonguldak, Turkey – **an Iron & Steel Company**

- Visit to **Karabuk Iron & Steel Institute (KISI)**, **Karabuk University**, Merkez, Karabuk, Turkey

- Visit to **Kardemir A. S**, Karabuk Yolu, Karabuk, Turkey – **an Iron & Steel Company**

- Visit to **Canakcilar Group Company**, Gokcebey, Zonguldak, Turkey – **a Ceramic Company**

- Visit to Department **of Materials Science & Engineering**, **Massachusetts Institute of Technology (MIT)**, Cambridge, MA, USA

- Visit to Department **of Materials Science & Engineering**, **Kyoto University**, Kyoto, Japan

- Visit to **M/s Roos & Kubler, Goppingen, Germany** – **a Tool and Die manufacturing plant**

- Visit to **Neelachal Ispat Nigam Ltd. (NINL) (Government of Odisha Undertaking)**, Duburi, Jajpur, Odisha, India – **an Integrated Steel Plant**

- Visit to **IDCOL Ferro Chrome & Alloys Limited (IFCAL) (Govt. of Odisha Undertaking)**, jajpur Road, Jajpur, Odisha, India – **a Ferro Alloy Plant**

- Visit to **Indian Metals and Ferro Alloy (IMFA) (IMFA Group)**, Choudwar, Cuttack, Odisha, India – **a Ferro Alloy Plant**

International/National Conference Attended:

- **Vendor meet-cum-workshop on energy efficient building materials & technologies**, organized by **Bureau of Energy Efficiency and Gujarat Energy Development Egency (GEDA)**, Ahmedabad Chapter held on 22nd November, 2019, Ahmedabad, Gujarat, India

- **ISNT Business Meet**, organized by **Indian Society for Non Destructive Testing**, Ahmedabad Chapter held on 31st August, 2019, Ahmedabad, Gujarat, India

- **14th International Exhibition on Foundry Technology, Equipment, Supplies and Services and 9th Edition of Cast India Expo–Exhibition for Indian Casting, Concurrent to the 66th Indian Foundry Congress,** organized by **The Institute of Indian Foundry-men** held on 10th–12th January, 2018, Gandhinagar, India

- **Third FAN Symposium on Large Scale Computing and its Application** organized by **Faculty Alumni Network** IITB**–A joint activity of IIT Bombay and IIT Bombay Heritage Foundation** held on 20th–21st January, 2017, Goa, India

CURRICULUM VITAE

- **International Conference** on **Processing of Lean Grade and Urban Ores (IC-LGO 2015)** organized by **Council of Scientific and Industrial Research–National Metallurgical Laboratory (CSIR-NML)** held on 20th–22nd January, 2015, Jamshedpur, Jharkhand, India

- **5th Meeting on Ionic Liquids** organized by **Ionic Liquid Research Association of Japan** held on 28th–29th October, 2014, Yokohama, Japan

- **International Workshop** on **"Recycling Technology of Critical Elements"** organized by **Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University** held on 12th November, 2013 at Sendai, Miyagi, Japan

- **1st International Workshop** on **"Sustainable Phosphorus Governance from Asian Perspective"** organized by **Department of Materials Science and Engineering, Tohoku University** held on 28th May, 2012 at Sendai, Miyagi, Japan

- **International Conference** on **"Public Financial Management for improving Programme Delivery"** organized by **Controller General of Accounts (CGA), Ministry of Finance, Govt. of India** held on 20–22nd October, 2008 at New Delhi, India

- **National Seminar** on "**Interactive meet on Titanium"** organized by **Minerals and Materials Technology (IMMT) (formerly Regional Research Laboratory (RRL)) (C.S.I.R.)** held on 23–24th January, 2006 at Bhubaneswar, Odisha, India

- **National Seminar** on **"Emerging Trends in Metallurgy"** organized by **Department of Metallurgical Engineering, Indian Institute of Technology - Banaras Hindu University (IIT-BHU) (formerly Institute of Technology - Banaras Hindu University (IT-BHU))** held on 21–22nd March, 2005 at Varanasi, Uttar Pradesh, India

Extra-Curricular Activities:

- Successfully completed **Rashtrabhasha Hindi Examinations (Prarambhik, Prabhesh, Parichay)** under **Rashtrabhasha Prachar Samiti**, Wardha, Maharastra, India

Membership of Professional Bodies:

- **Indian Institute of Metals (I.I.M)**
- **Indian Society for Non-destructive Testing (I.S.N.T)**
- **Mining and Materials Processing Institute of Japan (MMIJ)**
- **Association for Iron & Steel Technology**
- **American Ceramic Society**

Personal Details:

Date of Birth **: 15th June 1979**

Sex **: Male**

Nationality **: Indian**

CURRICULUM VITAE

Community	**: UR**
Marital status	**: Married**
Religion	**: Hindu**
Language known	**: Odiya, Hindi, and English**
Country visited	**: The United States of America (USA), Canada, Germany, France, Turkey, China, Japan, South Korea, and Thailand**
Father's name	**: Jugal Kishor Panigrahi**
Mother's name	**: Kumudini Panigrahi**
Permanent Address	**: Plot No. – 572/1641/4362, Back Side of Richi Residency, Nigam Vihar, Kanan Vihar Phase – II, P.O. – Patia, Bhubaneswar – 751024, Odisha, India**
Correspondence Address	**: Tata Value Homes, New Haven Ribbon Walk, Golden Garden C81, 8th Floor, 76B/1 Vandalur Kelambakkam Road, Keelakottaiyur, Chennai – 600127, Tamil Nadu, India**

The facts stated above are true to the best of my knowledge & belief.