

CURRICULUM VITAE

MRUTYUNJAY PANIGRAHI

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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), Bhubaneswar, 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

Work Experience

- Working as an **Assistant Professor** at **Department of Metallurgy and Materials Engineering, Bulent Ecevit University (BEU), Incivez, Zonguldak, Turkey**, from April, 2016 to till date

- Teaching and Research

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

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- Research

- Was working as an **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 an **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 a **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 an **Apprentice Trainee (Metallurgy)** at **Institute of Minerals and Materials Technology (IMMT) (C.S.I.R.)**, Bhubaneswar, Odisha, India from August, 2001 to August, 2002

- 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

Proposal Reviewer/ Reviewer of Journal

- ✓ **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

- ✓ **ACS Applied Materials & Interfaces**
- ✓ **JOM-The Journal of The Minerals, Metals & Materials Society (TMS)**
- ✓ **Industrial & Engineering Chemistry Research**
- ✓ **International Journal of Water Resources and Environmental Engineering**

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Publications in Referred International Journal

- ✓ **Mrutyunjay Panigrahi**, Mariusz Grabda, Dmytro Kozak, Arunkumar Dorai, Etsuro Shibata, Junichi Kawamura, and Takashi Nakamura, “**Liquid–liquid extraction of neodymium ions from NdCl₃ aqueous solution in phosphonium based ionic liquids**” (in preparation)
- ✓ 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 NdF₃**”, *Computational & Theoretical Chemistry*, 1061, 72–79 (2015)
- ✓ 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)
- ✓ 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 NdCl₃ and DyCl₃**”, *Fluid Phase Equilibria*, 383, 134–143 (2014)
- ✓ **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)
- ✓ **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)
- ✓ **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 Proceeding (Full Paper)

- 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)**, (2015) – Also published in AIP Conference Proceedings
- 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**, (2014)
- **Mrutyunjay Panigrahi**, Etsuro Shibata, Atsushi Iizuka, and Takashi Nakamura, “**Fe–Ti Alloy Production from Mixed Ilmenite and Titanium Dioxide by Direct Electrolytic Reduction**”

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in Molten Calcium Chloride Electrolyte”, The 8th Pacific Rim International Conference on Advanced Materials and Processing (PRICM8), p. 2331–2343 (2013)

- **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)



International/National Conference and Workshop

- 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
- 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
- Dorai Arunkumar, Yoshiki Iwai, **Mrutyunjay Panigrahi**, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, “¹H MRI of Ionic Liquid - Rare Earth Complex”, Critical Metal Symposium, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan
- Dorai Arunkumar, **Mrutyunjay Panigrahi**, Etsuro Shibata, Takashi Nakamura, and Junichi Kawamura, “¹H NMR Studies on complexes of Rare Earth Ions with Phosponium Based Ionic Liquid”, Critical Metal Symposium, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan
- **Mrutyunjay Panigrahi**, Mariusz Grabda, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura, “Liquid–liquid Extraction of Rare Earth Metal Ions from Aqueous Solution in Phosponium Based Ionic Liquids”, Critical Metal Symposium, 28–30th October, 2015, Tohoku University (Katahira Campus), Sendai, Miyagi Prefecture, Japan
- 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
- M. Grabda, **M. Panigrahi**, D. Kozak, E. Shibata, and T. Nakamura “Screening of Effective Ionic Liquids for Extraction of Rare Earth Elements and their Extraction Properties”, The Mining and Materials Processing Institute of Japan (MMIJ2015), 8–10th September, 2015, Ehime University (Johoku Campus), Matsuyama, Ehime Prefecture, Japan
- Mariusz Grabda, Sylwia Oleszek, **Mrutyunjay Panigrahi**, Dmytro Kozak, Etsuro Shibata, and Takashi Nakamura, “Screening of Ionic Liquids for Extraction of Neodymium and

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Dysprosium in aqueous solution”, “4th Korea-Japan Rare Metal Workshop”, 3rd September, 2015, Sendai, Japan

- 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**
- 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**
- **Mrutyunjay Panigrahi**, Dmytro Kozak, Mariusz Grabda, Etsuro Shibata, and Takashi Nakamura, **“Study on the liquid–liquid extraction of neodymium ion from NdCl₃ aqueous solution using trihexyl-tetradecyl-phosphonium benzoate ionic liquid”, 3rd International Symposium on Green Chemistry (ISGC 2015), 3–7th May, 2015, La Rochelle, France**
- 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**
- 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**
- **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 (Invited Lecture)**
- 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**
- 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**
- 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**

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- **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
- **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
- **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
- **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
- **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
- **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
- **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



Achievements

- **Qualified Test of English as a Foreign Language - Institutional Testing Program (TOEFL - ITP) – 2009**
- **Qualified Japanese Government (Monbukagakusho : MEXT) scholarship – 2009**
- **Ministry of Human Resource Development (HRD), Government of India scholarship in 2004–2006**

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- **Qualified Graduate Aptitude Test in Engineering (GATE) – 2004 with 91.36 percentile and All India Rank (AIR) – 85**
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Training & Inspection

- ❖ **Inspection of Coining Presses & Blanking Lines and Basic Training for Blanking Line at M/s Schuler Pressen GmbH & Co. KG, Goppingen, Germany**
 - ❖ **Training at M/s Roos & Kubler, Goppingen, Germany – a Tool and Die manufacturing plant**
 - ❖ **Inspection of Coin Blanks at M/s Jindal Stainless Limited, Hisar, Haryana, 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**