



Education:

- **Universiti Sains Malaysia (USM), Penang, Malaysia** (2015/04 – 2018/09)
Ph.D., *Materials Engineering (Pyrometallurgy), School of Materials & Mineral Resources Engineering, Internship, Div. of Materials Science and Engineering, Hokkaido University, Japan*
- **Sharif University of Technology, Tehran, Iran** (2003/09-2005/12)
M.Sc. Eng., *Department of Materials Science and Engineering*
- **Amirkabir University of Technology (Tehran Polytechnic), Iran** (1999/09-2003/07)
B.Sc. Eng. (Hons.), *Department of Materials Science and Metallurgical Engineering*

Research Interests:

- Molten Salt Electrolysis for Sustainable Metals Extraction
- Recycling of Rare Earth Elements (REEs) and Precious Metals
- Pyro-, Hydro-, and Electrometallurgical Processes
- Extractive Metallurgy and Minerals processing
- Titanium and Tantalum Metal Powders Production
- Process Design and Modeling of Metallurgical Processes
- Metallurgical Thermodynamics and Reaction Kinetics
- Ferrous and Non-Ferrous Metallurgy, Iron & Steelmaking
- High-Temperature Materials (HTMs)
- Shape Memory Alloys (SMAs)
- Nanomaterials & Energy Storage Materials

Work Experience:

- 2021/05-Present: Mitacs Elevate Postdoctoral Fellow, Process Engineering Advanced Research Lab (PEARL), Polytechnique Montréal, Québec, Canada
- 2020/12-2021/04: Postdoctoral Researcher, Department of Materials Science and Engineering, Kyushu University, Fukuoka, Japan.
- 2018/11-2020/12: JSPS Postdoctoral Fellow, Division of Materials Science and Engineering, Hokkaido University, Sapporo, Japan.

Awards:

- 2021-2022: **Mitacs Elevate Postdoctoral Fellowship**, Polytechnique Montréal, Québec, Canada.
- 2020 : **Sato Noriyasu Award for Young Researchers**, The Japan Institute of Metals and Materials, Hokkaido, Japan.
- 2018-2020: **Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship** for Overseas Researchers (Standard), Hokkaido University, Japan.
- 2018-2020: **KAKENHI**, Grant-in-Aid for JSPS Fellows (Ti Metal Powder Production from TiO-TiC-TiN), Japan Society for the Promotion of Science (JSPS)
- 2015-2018: **USM Ph.D. Fellowship**, Malaysia.
- 2017 : **JASSO Scholarship**, Hokkaido University, Japan.

Patents:

- 1- Ryosuke O. Suzuki and **Eltefat Ahmadi**, Method for Manufacturing Tantalum Powder (タantal粉末の製造方法), *Japanese Patent*, P2019-174300-070-JP01, *Japan Patent Office (JPO)*, 25th Sept 2019.
- 2- **Eltefat Ahmadi** and S.K. Sadrnezhaad, "Production of Nickel Titanium Memory Alloy by Electron Beam Melting Method", *Iranian Patent*, No. 35749 (38411264), 2005.

Peer-reviewed journal papers:

- 1- **Eltefat Ahmadi** and Ryosuke O. Suzuki, Tantalum Metal Production Through High-Efficiency Electrochemical Reduction of TaS₂ in Molten CaCl₂, *Journal of Sustainable Metallurgy*, 7 (2021) 437–447. DOI: [10.1007/s40831-021-00347-1](https://doi.org/10.1007/s40831-021-00347-1).
- 2- **Eltefat Ahmadi**, Ryosuke O. Suzuki, Takumi Kaneko, Tatsuya Kikuchi, A Sustainable Approach for Producing Ti and TiS₂ from TiC, *Metallurgical and Material Transactions B*, 52B (2021) 77–87. DOI: [10.1007/s11663-020-01988-5](https://doi.org/10.1007/s11663-020-01988-5).
- 3- Ryosuke O. Suzuki, Yuta Yashima, Takumi Kaneko, **Eltefat Ahmadi**, Tatsuya Kikuchi, Takafumi Watanabe, Genki Nogami, Synthesis of Silicon Sulfide by Using CS₂ Gas, *Metallurgical and Material Transactions B*, 52B (2021) 1379–1391. DOI: [10.1007/s11663-021-02103-y](https://doi.org/10.1007/s11663-021-02103-y).
- 4- **Eltefat Ahmadi** and Ryosuke O. Suzuki, An Innovative Process for Production of Ti Metal Powder via TiS_x from TiN, *Metallurgical and Material Transactions B*, 51B (2020) 140–148. DOI: [10.1007/s11663-019-01730-w](https://doi.org/10.1007/s11663-019-01730-w).
- 5- T. Kaneko, Y. Yashima, **Eltefat Ahmadi**, S. Natsui and R.O. Suzuki, Synthesis of Sc Sulfides by CS₂ Sulfurization, *Journal of Solid State Chemistry*, Vol. 285 (2020) 121268. DOI: [10.1016/j.jssc.2020.121268](https://doi.org/10.1016/j.jssc.2020.121268).
- 6- **Eltefat Ahmadi**, Ryosuke O. Suzuki, Tatsuya Kikuchi, Takumi Kaneko, Yuta Yashima, Towards a Sustainable Technology for Production of Extra-Pure Ti Metal: Electrolysis of Sulfurized Ti(C,N) in Molten CaCl₂, *International Journal of Minerals, Metallurgy and Materials*, 27 (2020), 1635–1643. DOI: [10.1007/s12613-020-2162-5](https://doi.org/10.1007/s12613-020-2162-5).
- 7- **Eltefat Ahmadi**, Y. Yashima, Ryosuke O. Suzuki and S.A. Rezan, Formation of Titanium Sulfide from Titanium Oxycarbonitride/ilmenite by CS₂ Gas, *Metallurgical and Material Transactions B*, 49B (2018) 1808–1821. DOI: [10.1007/s11663-018-1278-8](https://doi.org/10.1007/s11663-018-1278-8).
- 8- **Eltefat Ahmadi**, S.A. Rezan, N. Baharun, S. Ramakrishnan, A. Fauzi, G. Zhang, Chlorination kinetics of titanium nitride for production of titanium tetrachloride from nitrated ilmenite, *Metallurgical and Materials Transactions B*, 48B (2017) 2354–2366. DOI: [10.1007/s11663-017-1011-z](https://doi.org/10.1007/s11663-017-1011-z).
- 9- **Eltefat Ahmadi**, E. Ahmadi, A. Fauzi, H. Hussin, N. Baharun, K.S. Ariffin, S.A. Rezan, Synthesis of Titanium Oxycarbonitride by Carbothermal Reduction and Nitridation of Ilmenite with Recycling of Polyethylene Terephthalate (PET), *International Journal of Minerals, Metallurgy, and Materials*, 24, 4 (2017) 444–454. DOI: [10.1007/s12613-017-1425-2](https://doi.org/10.1007/s12613-017-1425-2).
- 10- N. Ibrahim, L.C. Keat, **E. Ahmadi**, S. Ramakrishnan, A. Fauzi, S.A. Rezan, A.R. Mohamed, Kinetic Modeling of Ilmenite Reduction with Compressed Natural Gas (CNG) Using MATLAB, *Materials Science Forum*, 928 (2018) 113–122. DOI: [10.4028/www.scientific.net/MSF.928.113](https://doi.org/10.4028/www.scientific.net/MSF.928.113).
- 11- **Eltefat Ahmadi**, N. I. Shoparwe, N. Ibrahim, S. A. Rezan, N. Baharun, The Effects of Experimental Variables on Iron Removal from Nitrated Malaysian ilmenite by Becher Process, *Extraction TMS 2018, Springer, Part of The Minerals, Metals & Materials Series (MMMS) Book Series, Extraction 2018*, 1383–1396–August 26–29, 2018: DOI: [10.1007/978-3-319-95022-8_113](https://doi.org/10.1007/978-3-319-95022-8_113).

- 12- **Eltefat Ahmadi**, EM Sereiratana, **S. A. Rezan**, F.-Y Yeoh, M.N. Ahmad Fauzi and G. Zhang, Assessment of Titanium Carbide Chlorination by Statistical Design, *Materials Science Forum*, Vol. 860 (2016) 111-114, <https://doi.org/10.4028/www.scientific.net/MSF.860.111>.
- 13- A. Yaraghi, M.H. Abang Sapri, **Eltefat Ahmadi**, Norlia Baharun, **Sheikh A. Rezan**, Microstructural Study of Leached Nitrided Malaysian Ilmenite with Coal-Polystyrene Reductant, *Key Engineering Materials*, Vol. 701 (2016) 132-137. <https://doi.org/10.4028/www.scientific.net/KEM.701.132>.
- 14- **Eltefat Ahmadi**, S. A. Rezan, H. Hussin, S. Ramakrishnan, N. Baharun, K. S. Ariffin and M.N. Ahmad Fauzi, The Preparation of Iron-Free $TiCl_4$ from Reduced and Nitrided Ilmenite by Polyethylene Terephthalate, *INROADS- An International Journal of Jaipur National University*, Vol. 5 (2016) 11-16. DOI: 10.5958/2277-4912.2016.00003.5.
- 15- **E. Ahmadi**, M. Malekzadeh and S. K. Sadrnezhaad, Preparation of Nanostructured High Temperature TZM Alloy by Mechanical Alloying and Sintering; *Int. Journal of Refractory Metals & Hard Materials*, Vol. 29 (2011) 141-145. DOI: 10.1016/j.ijrmhm.2010.09.003.
- 16- **E. Ahmadi**, M. Malekzadeh, and S.K. Sadrnezhaad, W-15wt% Cu Nano-composite Produced by Hydrogen-Reduction/Sintering of WO_3 -CuO Nano-powder, *Int. Journal of Refractory Metals & Hard Materials* Vol. 28 (2010) 441–445. DOI: 10.1016/j.ijrmhm.2010.02.002.
- 17- M. H. Pourgashti, E. Marzbanrad and **E. Ahmadi**, Corrosion Behavior of $Zr_{41.2}Ti_{13.8}Ni_{10}Cu_{12.5}Be_{22.5}$ Bulk Metallic Glass in Various Aqueous Solutions; *Materials and Design*, Vol. 31 (2010) 2676-2679. DOI: 10.1016/j.matdes.2009.11.055.
- 18- **Eltefat Ahmadi**, Mahdiah Malekzadeh, Sayed Khatiboleslam Sadrnezhaad, An Investigation on Effective Parameters for Synthesizing W-Cu nanocomposite via Mechanical Milling and Hydrogen Reduction Method, *MAJLESI Journal of Materials Engineering*, No. 17, 2011.
- 19- D. Moradkhani, Mahdiah Malekzadeh, and **Eltefat Ahmadi**, Nanostructured MnO_2 Synthesized via Methane Gas Reduction of Manganese Ore and Hydrothermal Precipitation Methods, *Journal of Transactions of Nonferrous Metals Society of China* 23 (2013) 134–139. DOI: 10.1016/S1003-6326(13)62439-5.
- 20- S. K. Sadrnezhaad, **E. Ahmadi** and M. Malekzadeh, Mechanism of Reaction of Molten NiTi with EBM Graphite Crucible, *Materials Science and Technology, Maney Publishing*, Vol 25, No. 6 (2009), P. 699. DOI: 10.1179/174328408X317075.
- 21- S.K. Sadrnezhaad, M. Mozzamel, E. Badami and **E. Ahmadi**, Breakthrough Curves for Absorption and Elution of Rhenium in a Column Ion Exchange System, *Hydrometallurgy*, Vol.85 (2007) 17-23. DOI: 10.1016/j.hydromet.2006.07.003.
- 22- S.K. Sadrnezhaad, **E. Ahmadi** and M. Mozammel, Kinetics of Silver Dissolution in Nitric Acid from $Ag-Au_{0.04}-Cu_{0.10}$ and $Ag-Cu_{0.23}$ Scraps, *Journal of Materials Science and Technology*, Vol. 22, No. 5 (2006) 696-700. <http://www.jmst.org/CN/Y2006/V22/I05/696>.

International Conferences and Meetings

- 1- **E. Ahmadi**, R.O. Suzuki, T. Kaneko, Y. Yashima and T. Kikuchi, Production of Ti Metal Powder from TiC by Sulfurization and Ca Reduction in Molten Salt, *The Japan Institute of Metals and Materials, January (2020)*, Hokkaido, Japan.
- 2- **Eltefat Ahmadi**, Ryosuke O. Suzuki and Tatsuya Kikuchi, Production of Ti and Ta Powders from Sulfurized Nitrides by Reduction in Molten Salt (2B08), *51st Molten Salt Chemistry Conference*, October (2019), Hokkaido, Japan.
- 3- **E. Ahmadi**, R.O. Suzuki, Production of Ti Metal Powder by OS Process from Sulfurized TiN, *The Mining and Materials Processing Institute of Japan (MMIJ 2019)*, Kyoto, Japan

- 4- **E. Ahmadi**, T. Kaneko, R.O. Suzuki, N. Baharun, S.A. Rezan, Synthesis of $TiCl_4$ by Low-Temperature Chlorination of TiN, *The Japan Institute of Metals and Materials*, CAMP-ISIJ, Vol.32 (2019)-802, J1
- 5- Takumi Kaneko, **Eltefat Ahmadi**, Ryosuke O. Suzuki, Production of Sc_2S_3 by Controlling CS_2 Vaporization Temperature, *The Japan Institute of Metals and Materials*, CAMP-ISIJ, Vol.32 (2019), September 2019, Okayama, Japan.
- 6- Ryosuke O. Suzuki, Yuta Yashima, Takumi Kaneko, **Eltefat Ahmadi**, Production of SiS_2 by CS_2 Gas Sulfidation, *The Japan Institute of Metals and Materials*, CAMP-ISIJ, Vol.32 (2019), September 2019, Okayama, Japan.
- 7- Ryosuke O. Suzuki, Yuta Yashima, Nobuyoshi Suzuki, **Eltefat Ahmadi**, Shungo Natsui, Tatsuya Kikuchi, Titanium Production via Titanium Sulfide, *The 14th World Conference on Titanium (Ti 2019)*, Vol. 32, MATEC Web of Conferences, June 2019, Nantes, France, Pages 07003, <https://doi.org/10.1051/mateconf/202032107003>.
- 8- Ryosuke O. Suzuki, Yuta Yashima, **Eltefat Ahmadi**, Nobuyoshi Suzuki, Shungo Natsui, Tatsuya Kikuchi, Titanium Production in $CaCl_2$ melt via TiS_2 from $TiFeO_3$, *11th International Symposium on Molten Salt Chemistry and Technology*, May 2019, Orleans, France.
- 9- **E. Ahmadi**, F.A. Alis, M.N. Ahmad Fauzi, N. Baharun, H. Hussin, Sivakumar Ramakrishnan and S. A. Rezan, Chlorination of Iron-Containing Nitrided Ilmenite Prepared by Carbothermal Process with Polystyrene and Coal, *Regional Conference on Materials & ASEAN Microscopy Conference 2017 (RCM & AMC 2017)*
- 10- **Eltefat Ahmadi**, S.A. Rezan and Ryosuke O. Suzuki, Low Temperature Chlorination of Nitrided Ilmenite Synthesized by CTRN Process, *The Japan Institute of Metals and Materials*, Hokkaido, Muroran Institute of Technology, Hokkaido Branch, Japan (2017), <http://www.jfshokkaido.jp/gm/2017/presen.html>
- 11- **Eltefat Ahmadi**, Sheikh Abdul Rezan, Hashim Hussi1, Norlia Baharun, Sustainable carbothermal reduction and nitridation of Malaysian Ilmenite concentrate by PET and coal, *The 3rd International Conference of Global Network for Innovative Technology (IGNITE2016) 2016*, Penang, Malaysia (AIP Conf. Proc. 1865, 060002-1–060002-5 (2017); doi: 10.1063/1.4993378)
- 12- **E. Ahmadi**, N.I. Shoparwe, M. A. Najib, **S. A. Rezan**, F.-Y Yeoh, N. Baharun1, S. A. Ramakrishnan, and G. Zhang, Ferric Chloride Chlorination of Titanium Nitride at Low Temperature, *2nd International Sciences, Technology and Engineering Conference, Advanced Materials, Chemistry and Physics*, 20th-23rd April 2016, Penang, Malaysia.
- 13- N Ibrahim, **E Ahmadi**, SA Rahman, MN Ahmad Fauzi, SA Rezan, Extraction of titanium from low-iron nitrided Malaysian ilmenite by chlorination, *AIP Conf. Proc.* 1805, 040005-1–040005-5 (2017); doi: 10.1063/1.4974426
- 14- **Eltefat Ahmadi**, M.Fuad Bin Basir, Norlia Binti Baharun, Sheikh Abdul Rezan Bin Abdul Hamid, et al. Reductant Effect on Microstructural and Phase Development During Nitridation of Malaysian Ilmenite, *IC-GeoE 2015*, 29-30th September 2015, Penang, Malaysia.
- 15- **Eltefat Ahmadi**, M.Fuad Bin Basir, Norlia Binti Baharun, Sheikh Abdul Rezan Bin Abdul Hamid, et al, The Effect of Carbon source on Carbothermal Reduction and Nitridation of Malaysian Ilmenite, *IC-GeoE 2015*, 29-30th September 2015, Penang, Malaysia.
- 16- **Eltefat Ahmadi**, Mahdieh Malekzadeh, S. Khatiboleslam Sadrnezhaad, An Investigation on the milling and hydrogen reduction behavior of nanostructured W-Cu oxide powder, *International Conference on Nanotechnology: Fundamentals and Applications, International-ASET, Nano2010*, Ottawa, Ontario, Canada, 4-6 August 2010, Paper No. 478.
- 17- **Eltefat Ahmadi**, R.O. Suzuki, T. Kikuchi, Formation of Titanium Sulfides from TiC and Reduction of TiS_2 in Molten $CaCl_2$, *The Japan Institute of Metals and Materials*, CAMP-ISIJ, J-1 Vol.33 (2020)-636.