Ayda Shahriari

Address: *Unit 514 - 780 Montgomery Street, Fredericton, NB, E3B2Y1*
Email: ayda.shahriari@unb.ca (ashahria@unb.ca)
Phone: +1 (506)2604500
Nationality: Iranian
Residency: Temporary resident (Post-Graduation Work Permit (PGWP))

Academic & Research Qualification

- **Postdoctoral Research Fellow :** Marine Additive Manufacturing Center of Excellence (MAMCE), University of New Brunswick, Fredericton, NB, Canada. (Feb. 2023 – Present).

  Research works/projects and tasks/activities:

  - Theoretical studies for modification and developing the appropriate models for evolution of solidification structures during the additive manufacturing process on stainless steels.
  - Microstructure characterizations and their correlations with corrosion behavior of the Cu-Al-Ni alloys.
  - Finding a mechanism of the solid-state transformation during the heat-treatment of the martensitic stainless steel (CX alloy) fabricated by laser powder bed fusion technique.
  - Set-up the corrosion tests in the MAMCE lab.
  - Promoting the MAMCE Lab through writing journal articles and outreach events.
  - Assisting faculty member(s) in preparation of successful research proposals (e.g. HI-AM NSERC Alliance proposal)
  - Interviewing and ranking of applicants for co-op, PhD student, PDF and Research Associate positions.
  - Advising/Mentoring graduate students.

- **Doctor of Philosophy (PhD):** Mechanical Engineering, University of New Brunswick, Fredericton, NB, Canada. (Jan. 2019 – Dec. 2022).
  - *Thesis:* "A study on the corrosion properties of a novel precipitation hardening stainless steel fabricated by laser powder bed fusion".

- **Doctor of Philosophy (PhD):** Materials Engineering, University of Tabriz, Tabriz, Iran. (Sep. 2012.-.May. 2017).

- *Thesis: "*Electrochemical impedance spectroscopy of YSZ coating applied on AZ91 alloy by Electrophoretic deposition process*".*

➢ **Master of Science (MSc):** Materials Engineering Minored in Corrosion Engineering and protection of materials, Tarbiat Modares University, Tehran, Iran. (Sep. 2009- Sep. 2011).

- *Thesis:* "Investigation of high pH stress corrosion cracking of X70 gas pipeline steel in carbonate-bicarbonate solution".

➢ **Bachelor of Science (BSc):** Materials engineering Minored in extractive metallurgy, Tehran Polytechnic, Tehran, Iran. (Sep. 2004- Dec. 2008).

- *Thesis: "*Temperature Investigation of Heat-treatment on Microstructure and mechanical behavior of Dual Phase Steel*".*

Industry Experience

Research Engineer, Amirkabir University of Technology (AUT)-Tehran Polytechnic, Tehran, Tehran, Iran. (Sep. 2010- Dec. 2011)
September 2010 - December 2011
Compilation of technical encyclopedia of steelmaking for Iranian engineering institute.

Selected Honors & Awards

3rd Rank among all graduate Material Engineering students in "Bachelor program", Tehran Polytechnic, Tehran, 2008, Iran.
1st Rank among all graduate Material Engineering students in "Master program", Tarbiat Modares University, Tehran, 2011, Iran.
1st Rank among all graduate Material Engineering students in "PhD program", Tabriz University, Tabriz, 2017, Iran.
1st Rank among all graduate Mechanical Engineering students in "PhD program", University of New Brunswick, Fredericton, 2022, Canada.

Publications

➢ **Articles published in refereed Journals**

1. S. Dehgahi, **A. Shahriari**, A. Odeshi, M. Mohammadi, Influence of Ti Content on High Strain Rate Mechanical and Corrosion Behavior of Additively Manufactured Maraging Steels, J. Mater. Eng. Perform. 32 (2023) 1169–1184. https://doi.org/10.1007/S11665-022-07166-9/FIGURES/16.
2. M. Sanjari, M. Mahmoudiniya, H. Pirgazi, S. Tamimi, M.H. Ghoncheh, **A. Shahriairi**, A. Hadadzadeh, B.S. Amirkhiz, M. Purdy, E.G. de Araujo, L. Kestens, M. Mohammadi, Microstructure, texture, and anisotropic mechanical behavior of selective laser melted maraging stainless steels, Mater. Charact. 192 (2022) 112185. https://doi.org/10.1016/J.MATCHAR.2022.112185.

3. **A. Shahriari**, J. Samei, M.Sanjari , M. Jahanbakht , B. Shalchi Amirkhiz , M. Mohammadi, Plastic injection molding dies using hybrid additively manufactured 420/CX stainless steels: electrochemical considerations, Npj Materials Degradation 2022, DOI: 10.1038/s41529-022-00280-y.
4. **A. Shahriari**, M. Sanjari, H. Pirgazi, F. Fazeli, B. Shalchi Amirkhiz, L.A.I. Kestens, M. Mohammadi, Microstructural Evolution in Additively Manufactured Fe-Cr-Ni Maraging Stainless Steel, Metall. Mater. Trans. A 2022 535. 53 (2022) 1771–1792. https://doi.org/10.1007/S11661-022-06633-1.
5. **A. Shahriari**, M. Ghaffari, L. Khaksar, A. Nasiri, A. Hadadzadeh, B.S. Amirkhiz, M. Mohammadi, Corrosion resistance of 13wt.% Cr martensitic stainless steels: Additively manufactured CX versus wrought Ni-containing AISI 420, Corros. Sci. 184 (2021) 109362. https://doi.org/10.1016/J.CORSCI.2021.109362.
6. **A. Shahriari**, L. Khaksar, A. Nasiri, A. Hadadzadeh, B.S. Amirkhiz, M. Mohammadi, Microstructure and corrosion behavior of a novel additively manufactured maraging stainlesssteel, Electrochim. Acta. 339 (2020) 135925. doi:10.1016/j.electacta.2020.135925.
7. J. Samei, H. Asgari, C. Pelligra, M. Sanjari, S. Salavati, **A. Shahriari**, M. Amirmaleki, M. Jahanbakht, A. Hadadzadeh, B.S. Amirkhiz, M. Mohammadi, A hybrid additively manufactured martensitic-maraging stainless steel with superior strength and corrosion resistance for plastic injection molding dies, Addit. Manuf. 45 (2021) 102068. https://doi.org/10.1016/J.ADDMA.2021.102068.
8. A. Hadadzadeh, **A. Shahriari**, B.S. Amirkhiz, J. Li, M. Mohammadi, Additive manufacturing of an Fe–Cr–Ni–Al maraging stainless-steel: Microstructure evolution, heat-treatment, and strengthening mechanisms, Mater. Sci. Eng. A. 787 (2020) 139470. doi:10.1016/j.msea.2020.139470.
9. M. Sanjari, A. Hadadzadeh, H. Pirgazi, **A. Shahriari**, B.S. Amirkhiz, L.A.I. Kestens, M. Mohammadi, Selective laser melted stainless-steel CX: Role of built orientation on microstructure and micro-mechanical properties, Mater. Sci. Eng. A. 786 (2020) 139365. doi:10.1016/j.msea.2020.139365.
10. **A. Shahriari**, H. Aghajani, Electrophoretic deposition of 3YSZ coating on AZ91D using an aluminum interlayer, Prot. Met. Phys. Chem. Surfaces. 53 (2017) 518–526. doi:10.1134/S2070205117030212.
11. **A. Shahriari**, H. Aghajani, M.G. Hosseini, A Study of Oxidation Behavior of AZ91D Alloy with YSZ Coating Using EIS, Institute for Color Science and Technology (ICST), 2016.
12. **A. Shahriari**, H. Aghajani, Electrophoretic Deposition of 3YSZ Coating on AZ91D Alloy Using Al and Ni-P Interlayers, J. Mater. Eng. Perform. 25 (2016) 4369–4382. doi:10.1007/s11665-016-2253-7.
13. **A. Shahriari**, H. Aghajani, M.G. Hosseini, Corrosion Resistance Enhancement of AZ91 Magnesium Alloy Using Ni-P Interlayer and Electrophoretic Deposited 3YSZ Coating, Institute for Color Science and Technology (ICST), 2016.
14. **A. Shahriari**, T. Shahrabi, A.A. Oskuie, Effects of cathodic potential, bicarbonate, and chloride ions on SCC of X70 pipeline steel, J. Mater. Eng. Perform. 22 (2013) 1421–1429. doi:10.1007/s11665-012-0416-8.
15. **A. Shahriari**, T. Shahrabi, A.A. Oskuie, A study on stress corrosion cracking of X70 pipeline steel in carbonate solution by EIS, J. Mater. Eng. Perform. 22 (2013) 1459–1470. doi:10.1007/s11665-012-0418-6.
16. A.A. Oskuie, T. Shahrabi, **A. Shahriari**, E. Saebnoori, Electrochemical impedance spectroscopy analysis of X70 pipeline steel stress corrosion cracking in high pH carbonate solution, Corros. Sci. 61 (2012) 111–122. doi:10.1016/j.corsci.2012.04.024.

- **Refereed Conference Papers**

1. M. Sanjari, A. Hadadzadeh, **A. Shahriairi**, S. Tamimi, H. Pirgazi, B.S. Amirkhiz, L. Kestens, M. Mohammadi, On the Effect of Building Direction on the Microstructure and Grain Morphology of a Selective Laser Melted Maraging Stainless-steel, in: Miner. Met. Mater. Ser., Springer, 2020: pp. 285–295. doi:10.1007/978-3-030-36296-6_27.
2. **A. Shahriari**, H. Aghajani, and S. Fazlinejad, A study of corrosion behavior of 3YSZ coating on AZ91D alloy different interlayers, Eurocorr2016 congress, 11-15 September 2016, Montpellier, France.
3. **A. Shahriari**, H. Aghajani, A study on the electrophoretic deposition of 3YSZ coating on AZ91 alloy plated by Ni-P electroless interlayer" 6th International Color & Coating Congress, 10-12 November 2014, Tehran, Iran.

Teaching Experience

Teaching Assistant: Several years of experience in different fields/universities:
University of New Brunswick (2019-2022) : total of 8 terms.

- *Courses:* Mechanics of Materials (2 terms), Heat transfer (1 term), Thermodynamics I Laboratory (1 term), Materials Science Laboratory (1 term), Machine design (1 term), Mechanics for Engineers (1 term), Thermodynamics I (1 term).

University of Tabriz (2012-2017): total of 5 terms

- Courses: Thermodynamic in Materials Engineering (5 terms)

Instructor: two years experiences in relevant fields to Mechanical Engineering (2014-2016)

- Courses: Mechanics of Materials, and Fundamental of Materials Science for undergraduate students in Azad University, Iran.

Advising/Mentoring/Training

University of New Brunswick (2019-present)
Advising/Mentoring: 1 PhD student
Training: 1 visiting researcher on metallography processes such as cutting tools, hot-mounting, grinding/polishing/etching, optical microscopy, hardness testing.

Service Experience

- **Reviewer:** review of scientific articles for some reputable ISI journals:
  Additive Manufacturing, Materials Science & Engineering A, Metallurgical and Materials Transactions A.

- **Hiring Committee Member**
  University of New Brunswick (2019-present)
  Interviewing and ranking of applicants for PhD student positions.

References

Dr. Mohsen Mohammadi, Associate Professor,
Director, Marine Additive Manufacturing Centre of Excellence (MAMCE)
Department of Mechanical Engineering
University of New Brunswick

Curriculum Vitae | Ayda Shahriari

Mailing Address: 15 Dineen Drive, P.O. Box 4400
Fredericton, NB, Canada, E3B 5A3, Office: Head Hall, E45-A
Phone: +1 (506) 458-7104
Email: Mohsen.Mohammadi@unb.ca

Dr. Ali Nasiri, Assistant Professor & Canada Research Chair in Ocean Engineering
Department of Mechanical Engineering
Dalhousie University
Phone: 902-494-3227
Fax: 902-494-6711
Mailing Address:
1360 Barrington St, PO BOX 15000
Sexton Campus; Room C-351
Halifax, NS B3H 4R2
Email: ali.nasiri@dal.ca
Dr. Guida Bendrich, Professor in chemical Engineering
Department of Chemical Engineering
University of New Brunswick
Mailing Address: 15 Dineen Drive, P.O. Box 4400
Fredericton, NB, Canada, E3B 5A3, Office: Head Hall, E39-A
Phone: 1 506 447 3238
Email: bendrich@unb.ca