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## [CURRICULUM VITAE]

Ahmad Bahmani (PhD) Materials Science and Engineering

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### EDUCATION

| Degree   | University                                | Uni. Rank | Major  | Country | Start     | End         |
|----------|---|-----------|--|---------|-----------|-------------|
| Post-Doc | Seoul National University                 | 35        | Alloy Design for Improving Strength and Corrosion Resistance | KOREA   | Feb.2018  | Jun. 2018   |
| Post-Doc | Tehran University                         | -         | Alloy Design for Improving Strength and Corrosion Resistance | IRAN    | July.2018 | March. 2020 |
| Ph.D.    | Seoul National University                 | 35        | Materials Science and Engineering                            | KOREA   | Mar.2013  | Mar.2018    |
| M.Sc.    | Sharif University of Technology           | 551       | Materials Science and Engineering                            | IRAN    | Sep.2006  | Mar.2009    |
| B.Sc.    | Iran University of Science and Technology | N/A       | Materials Science and Engineering                            | IRAN    | Sep.2002  | Sep.2006    |

### WORK EXPERIENCE

| Title               | Company  | Job Description                     | Country | Start     | End     |
|---------------------|--|-------------------------------------|---------|-----------|---------|
| Assistant Professor | Iranian Research Organization for Science and Tech.                | Research/Teaching                   | IRAN    | Nov.2021  | Present |
| CEO/Founder         | ARTA-Mag ( <a href="http://artofmat.de/">http://artofmat.de/</a> ) | Developing and Designing New Ultra- | IRAN    | June 2020 | Present |

| light Magnesium Alloys |   |                                     |            |          |          |
|------------------------|---|-------------------------------------|------------|----------|----------|
| Inspector              | IS Industrie/IGS/<br>Payesh Gostar            | Oil and Gas Projects<br>Products    | Korea/Iran | Sep.2014 | Sep.2019 |
| <b>CEO</b>             | <b>Arta Research Co.</b>                      | Engineering Design and<br>Education | Iran       | Sep.2010 | Sep.2013 |
| Materials<br>Expert    | <b>Razi Metallurgical<br/>Research Center</b> | Casting Simulation and<br>Design    | Iran       | Sep.2008 | Sep.2013 |

## LANGUAGE

1. Farsi: Native
2. English: Excellent
3. Korean: Beginner

## PUBLICATION

### Journal paper:

1. M Fatehi M, M Malekan, A Bahmani Influence of sample orientation on cytocompatibility of pure magnesium, Mat Phys and Chem, 2024.
2. A Bahmani, "Effect of grain size on the corrosion resistance of the Fe41Mn25Ni24Co8Cr2 high entropy alloy." Corrosion Science, 2024.
3. A Afsharnaderi, M Lotfpour, A Bahmani, ..., "Enhanced corrosion resistance of the as-cast AZ91 magnesium alloy by micro-addition of the strontium and rare earth elements", Materials Science and Technology, 1-15, 2023.
4. H Yeganeh, A Bahmani,..., "Enhanced oxidation and overheating resistance of the extruded Mg-Zn-Al-Mn magnesium alloy by Calcium addition", Journal of Magnesium and Alloys 11 (4), 1276-1291
5. A Bahmani, M Lotfpour, M Taghizadeh, WJ Kim, "Corrosion behavior of severely plastically deformed Mg and Mg alloys", Journal of Magnesium and Alloys, 10, Pages 2607-2648, 2022.
6. PM Kalayeh, M Malekan, A Bahmani, ..., "Combination of severe plastic deformation and heat treatment for enhancing the corrosion resistance of a new Magnesium alloy" Journal of Alloys and Compounds 927, 166939, 2022.

7. P Golmohammadi, F Saljooghi, A Bahmani, ..., "On the synthesis and sintering behavior of a novel Mg-Ca alloy, Part I: Mechanical alloying" *Synthesis and Sintering* 2 (3) 2022.
8. E Ahounbar, A Bahmani, B Nayebi, SMM Khoei, FA Zaeim, MS Asl, In-situ synthesized MgO-based ceramic coatings on a novel Mg-Ca material: Morphological response to the PEO electrolyte *Surfaces and Interfaces*, 102285, 2022.
9. A Jalali, M Malekan, ES Park, R Rashidi, A Bahmani, GH Yoo
- 10., "Thermal behavior of newly developed Zr<sub>33</sub>Hf<sub>8</sub>Ti<sub>6</sub>Cu<sub>32</sub>Ni<sub>10</sub>Co<sub>5</sub>Al<sub>6</sub> high-entropy bulk metallic glass" *Journal of Alloys and Compounds* 892, 162220, 10, 2022.
11. A Jalali, M Malekan, ES Park, R Rashidi, A Bahmani, GH Yoo, "Deformation behavior of Zr<sub>33</sub>Hf<sub>8</sub>Ti<sub>6</sub>Cu<sub>32</sub>Ni<sub>10</sub>Co<sub>5</sub>Al<sub>6</sub> high-entropy bulk metallic glass and Cu<sub>47</sub>Zr<sub>47</sub>Al<sub>6</sub> low-entropy bulk metallic glass at room and high temperatures", *Materials Science and Engineering: A* 832, 142499, 3, 2022.
12. M Lotfpour, C Dehghanian, M Emamy, A Bahmani, M Malekan, A Saadati, ..."In-vitro corrosion behavior of the cast and extruded biodegradable Mg-Zn-Cu alloys in simulated body fluid (SBF), *Journal of Magnesium and Alloys* 9 (6), 2078-2096, 19, 2021.
13. M Lotfpour, A Bahmani, H Mirzadeh, M Emamy, M Malekan, WJ Kim, ..., "Effect of microalloying by Ca on the microstructure and mechanical properties of as-cast and wrought Mg-Mg<sub>2</sub>Si composites", *Materials Science and Engineering: A* 820, 141574, 16, 2021.
14. A Baghani, A Kheirabi, A Bahmani, H Khalilpour, "Reducing Melt Surface Turbulence by employing Surge and Filter in a Conventional Non-Pressurizing Gating System: Simulation and Experiment" *Archives of Metallurgy and Materials*, 663, 2021.
15. M Malekan, A Bahmani, "Determination of dendrite coherency point characteristics in Al-Si-Mg alloy" *International Journal of Cast Metals Research*.
16. A Bahmani, S Arthanari, KS Shin, Achieving a High Corrosion Resistant and High Strength Magnesium Alloy Using Multi Directional Forging, *Journal of Alloys and Compounds*, 158077 1, 2021
17. M Lotfpour, A Bahmani, "Effect of microalloying by Ca on the microstructure and mechanical properties of as-cast and wrought Mg-Mg<sub>2</sub>Si composites", *MSEA*, 2021
18. M Lotfpour, C Dehghanian, M Emamy, A Bahmani\*, M Malekan, A Saadati, In-vitro corrosion behavior of the cast and extruded biodegradable Mg-Zn-Cu alloys in simulated body fluid (SBF), *Journal of Magnesium and Alloys*, 2021.

19. A Baghani, A Kheirabi, A Bahmani, Reducing Melt Surface Turbulence By Employing Surge And Filter In A Conventional Non-Pressurizing Gating System: Simulation And Experiment, Archives of Metallurgy and Materials 66, 2021.
20. M Malekan, A Bahmani, Determination of dendrite coherency point characteristics in Al-Si-Mg alloy, International Journal of Cast Metals Research, 2020.
21. A Bahmani, WJ Kim, Effect of Grain Refinement and Dispersion of Particles and Reinforcements on Mechanical Properties of Metals and Metal Matrix Composites through High-Ratio Differential Speed, Materials 13, 4159, 2020.
22. A Bahmani, KS Shin, Controlling the Microstructure and Texture Using Multidirectional Forging (MDF) to Develop a Low Corrosion Rate Mg Alloy, Corrosion 76 (8), 750-765, 2020.
23. A Bahmani, B Nayeibi, SB Zonoozi, L Wang, M Shokouhimehr, Mechanochemical characteristics of Ca-added Mg-based alloys: A multimodality approach, Materials Characterization, 110475, 2020.
24. KS Shin, A Bahmani, Magnesium alloy having excellent strength and corrosion resistance and manufacturing method for the same, KR Patent KR20,190,098,307 A, 2020.
25. KS Shin, A Bahmani, Magnesium-alloy and manufacturing method thereof, KR Patent KR102078910B1, 2020.
26. Z Zareian, M Emamy, M Malekan, H Mirzadeh, WJ Kim, A Bahmani Tailoring the mechanical properties of Mg–Zn magnesium alloy by calcium addition and hot extrusion process, Materials Science and Engineering: A 774, 138929, 2020.
27. A Bahmani, S Arthanari, KS Shin, Formulation of corrosion rate of magnesium alloys using microstructural parameters, Journal of Magnesium and Alloys, 2020.
28. A Bahmani, S Arthanari, KS Shin, Improvement of corrosion resistance and mechanical properties of a magnesium alloy using screw rolling, Journal of Alloys and Compounds, 2020.
29. A Saadati, A Minagar, G Naseri, A Bahmani, M Malekan, Synthesis of NiAl-TiC composites from elemental powders by volume combustion method Materials Science and Technology 35 (7), 831-838, 2019.
30. A Bahmani, S Arthanari, KS Shin, Corrosion behavior of Mg–Mn–Ca alloy: Influences of Al, Sn and Zn, Journal of Magnesium and Alloys 7 (1), 38-46, 2019.
31. M Mehrabian, B Nayeibi, A Bahmani, D Dietrich, T Lampke, E Ahounbar, Deformation, Cracking and Fracture Behavior of Dynamically-Formed Oxide Layers on Molten Metals, Metals and Materials International , 2019.

32. A Bahmani, S Arthanari, KS Shin, Improved Corrosion Resistant and Strength of a Magnesium Alloy Using Multi-Directional Forging (MDF), The International Journal of Advanced Manufacturing Technology, 2019.
33. A Sadeghi, E Hasanpur, A Bahmani, KS Shin, Corrosion behaviour of AZ31 magnesium alloy containing various levels of strontium, Corrosion Science 141, 117-126.
34. A. Bahmani, KS Shin, "Effects of Severe Plastic Deformation on Mechanical Properties and Corrosion Behavior of Magnesium Alloys", Mg Technology 2018.
35. B. Nayebi, A. Bahmani, "Characteristics of dynamically formed oxide films in Aluminum-Calcium foamable alloys", Journal of Alloys and Compounds, 2016.
36. A. **Bahmani**, N. Hatami, "A Mathematical Model for Prediction of Microporosity Formation in Aluminum Alloy A356", International Journal of Advanced Manufacturing Technology, 2013.
37. A. Kheirabi, A. Baghani, A. **Bahmani**, Understanding the occurrence of the surface turbulence in a nonpressurized bottom gating system: Numerical simulation of the melt flow pattern, Journal of Materials Design and Applications, 2015.
38. A. **Bahmani**, Gh. Eisaabadi, Effects of Hydrogen Level and Cooling Rate on Ultimate Tensile Strength of Al A319 Alloy, Russian Journal of Non-Ferrous Metals, 2014.
39. A. H. Faraji, A. **Bahmani**, "An Investigation to importance of Heat Conductivity in Numerical Simulation of stationary GTA Welding Pool for Pure Aluminum", Journal of Central South University of Technology, 2014.
40. A. Baghani, A. **Bahmani**, Numerical Investigation of the Effect of Sprue Base Design on the Flow Pattern of Aluminum Gravity Casting, Defect and Diffusion Forum, 2013.
41. A. Baghani, A. **Bahmani**, Application of Computational Fluid Dynamics to study the effects of Sprue Base Geometry on the Surface and Internal Turbulence in gravity casting, Journal of Materials Design and Applications, 2013.
42. M. O. Shabani, A. **Bahmani**, "Prediction of Microstructure Parameters in Aluminum Alloy A356", Kovove Materialy, November 2012.

### Patents

1. A Bahmani, Development of a Worked Magnesium Alloy with High Oxidation Resistance and Mechanical properties, 140150140003003802.
2. A Bahmani, Manufacturing Method of A Biodegradable and Biocompatible Mg-Mn-Ca Alloy for Use as Osteoimplant, 140150140003004450.
3. KS Shin, A Bahmani, Magnesium alloy having excellent strength and corrosion resistance and manufacturing method for the same, KR Patent KR20,190,098,307 A, 2020.
4. KS Shin, A Bahmani, Magnesium-alloy and manufacturing method thereof, KR Patent KR102078910B1, 2020.

#### Some of International Conference:

1. Mechanical Properties and Corrosion Behavior of Mg Alloy Process by Multi Directional Forging, UFGNSM, Kish, Iran, 2017.
2. Effects of Severe Plastic Deformation on Mechanical Properties and Corrosion Behavior of Magnesium Alloys, TMS, USA, 2018.
3. Development of Biodegradable Magnesium Alloys, TMS, USA 2017. Mechanical Properties and Corrosion Behavior of Mg Alloy Process by Screw Rolling Process, KIM (Korean Institute of Materials), 2016.
4. Effect of Al, Sn, and Zn on Corrosion and Mechanical Behavior of the Mg-Ca Alloy, KIM (Korean Institute of Materials), 2015.
5. More than 10 Iranian Conferences

#### Books

1. A. **Bahmani**, A. Baghani, SMH Mirbagheri. P. Davami. "Simulation of Casting Processes", Amir Kabir Pub., 2017.
2. B. Nayeibi, A. **Bahmani**, "10 Rules of Casting", Translation, 2013.
3. M. Shahedi, A. **Bahmani**, "Materials Science", 2013.
4. F. Anooshehpour, A. **Bahmani**, "Dilect of Pashand (A Village in Alborz Province)", Under Publication

#### REFERENCES

Prof. Kwang Seon Shin, Seoul National University, [ksshin@snu.ac.kr](mailto:ksshin@snu.ac.kr)

Prof. Eun Soo Park, Seoul National University, [espark@snu.ac.kr](mailto:espark@snu.ac.kr)

Prof. Kim Woo Jin, Hongik University, [kimwj@hongik.ac.kr](mailto:kimwj@hongik.ac.kr)

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**Ahmad Bahmani (PhD)** Materials Science and Engineering

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Prof. Massoud Goodarzi, Iran University of Science and Technology:  
[m.goodarzi@iust.ac.ir](mailto:m.goodarzi@iust.ac.ir)

## Industrial Experience:

### - Razi Metallurgical Research Center (2007 - 2013)

- Casting Design
- Simulation Senior Expert (SUTCAST Simulation Development, Software Training)
- Inspection of Various Scale Casting Parts
- Test Documents Preparation
- SUTCAST Tutorial Manual, Casting Design, Inspection

### -Inspection

- IS Industrie, Pipeline Products Inspection in South Korea ([www.isindustrie.com](http://www.isindustrie.com)) (2014~Present)
- IRICO, Products Inspection in South Korea (2015~Present)
- International Good Inspection Company ([igico.com](http://igico.com)) (2015~Present)
- Payesh Gostaran Pishro Co. ([www.pgpc.org](http://www.pgpc.org)) (2017)
- Iran Standard and Quality Inspection Company ([www.isqi.co.ir](http://www.isqi.co.ir)) (2016~Present)

## Skills:

- Good Knowledge about Metals and Materials (Steel, Cast Irons, Magnesium and Aluminum Alloys) Properties, and Processing
- Academic Fields: Casting, Deformation, Corrosion, Mechanical Properties, Texture Analysis, Casting Simulation, Surface Studies
- Techniques: SEM, XRD, EBSD, AFM, SKPFM, TEM,
- Simulation Software, Fluid Flow and Solidification, First Principle Calculations