

CURRICULUM VITAE

- **Personal Details**

Name: Behzad

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Date of Birth: 1983/02/01

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University of Bonab, Bonab, East Azerbaijan, Iran



- **Educations**

2010 - 2015

Ph. D. in Materials Science and Engineering

K. N. Toosi University of Technology, Tehran, Iran

Thesis Topic: *Optimization of Semi Solid Forming Process of 7075 Aluminum Alloy*

2007 - 2009

M. Sc. in Materials Science and Engineering

K. N. Toosi University of Technology, Tehran, Iran

Thesis Topic: *Study on the Creep Behavior and Remaining Life Assessment of MAR- M302 Cobalt Base Superalloy*

2002 - 2006

B. Sc. in Materials Science and Engineering

Sahand University of Technology, Tabriz, Iran

Thesis Topic: *Study on Shape Memory Properties of Fe-base Shape Memory Alloys*

- **Work experience**

2017-present

Associate Professor, Materials Science and Engineering, Engineering Faculty, University of Bonab, Bonab, Iran.

2008-2016

Senior Researcher at Technology Development Institute (TDINS), ACECR, Sharif University of Technology, Tehran, Iran.

• Publications

○ **Book:**

- A. Jazayeri-Gharehbagh, J. Molla, M. Esfahani, **B. Binesh**, M. Kiani, S. Mirzaie, H. A. Hesari, R. Bakhtiari, S. Parvizi, “*Rapid solidification technology and its application in production of amorphous and nanocrystalline materials*”, TDINS, Tehran, Iran, 2011 (in Persian).

○ **ISI papers:**

- **B. Binesh**, M. Aghaie-Khafri, A. Fayegh, *Processing of IN718/Ti-6Al-4V bimetallic joint using transient liquid phase bonding: Effect of bonding temperature on the microstructure and mechanical properties*, Philosophical Magazine, vol. 102, pp. 745-772, 2021.
- A. Fayegh, M. Aghaie-Khafri, **B. Binesh**, *Interfacial microstructure and mechanical properties of transient liquid phase bonded IN718/Ti-6Al-4V joints*, Welding in the World, vol. 65, pp. 1955-1968, 2021.
- M. Emami, M. Bozorg, **B. Binesh**, H.R. Jafari Nodooshan, *Correlation between Microstructural Characteristics and Corrosion Properties of Mg-RE Alloys in Ringer’s Solution*, Journal of The Electrochemical Society, vol. 167, 161511, 2021.
- M. Emami, **B. Binesh**, J. M. Heydarzadeh, *Analysis of microstructure, kinetics of isothermal solidification and mechanical properties of IN718/MBF-20/SS316L TLP joints*, Philosophical Magazine, vol. 101, pp. 1726-1749, 2021.
- S. Mosadegh, M. Aghaie-Khafri, **B. Binesh**, *Microstructural evolution and flow behaviour in hot compression of as-extruded Mg-Gd-Nd-Zn-Zr alloy*, Philosophical Magazine, published online, 2021.
- **B. Binesh**, *Diffusion brazing of IN718/AISI 316L dissimilar joint: microstructure evolution and mechanical properties*, Journal of Manufacturing Processes, vol. 57, pp. 196-208, 2020.
- S. Mirzaie, **B. Binesh**, *Microstructure Evolution Mechanism and Corrosion Behavior of Transient Liquid Phase Bonded 304L Stainless Steel*, Metals and Materials International, vol. 27, pp. 3417-3431, 2020.
- **B. Binesh**, M. Aghaie-Khafri, *RUE-based semi-solid processing: Microstructure evolution and effective parameters*, Materials and Design, vol. 95, pp. 268-286, 2016.
- **B. Binesh**, M. Aghaie-Khafri, *Microstructure and texture characterization of 7075 Al alloy during the SIMA process*, Materials Characterization, vol. 106, pp. 390-403, 2015.
- **B. Binesh**, M. Aghaie-Khafri, *Phase evolution and mechanical behavior of the semi-solid SIMA processed 7075 aluminum alloy*, Metals, vol. 6, pp. 1-23, 2016.
- M. Aghaie-Khafri, **B. Binesh**, *Creep behavior of MAR-M302 Co-base superalloy*, Journal of Materials Science, vol. 45, pp. 3990-3997, 2010.
- **B. Binesh**, A. Jazayeri Gharehbagh, *Transient liquid phase bonding of IN738LC/MBF-15/IN738LC: solidification behavior and mechanical properties*, Journal of Materials Science and Technology, Vol. 32, pp. 1137-1151, 2016.
- **B. Binesh**, M. Aghaie-Khafri, *Modelling and optimization of semi-solid processing of 7075 Al alloy*, Materials Research Express, vol. 4, No. 9, 096502, 2017.

- M. Shaban Ghazani, **B. Binesh**, A. Fardi-Ilkhchy, *Effect of Strain Rate Sensitivity and Strain Hardening Exponent of Materials on Plastic Strain Distribution and Damage Accumulation During Equal Channel Angular Pressing*, Iranian Journal of Science and Technology: Transactions of Mechanical Engineering, vol. 43, pp. 831-844, 2019.
- M. Shaban Ghazani, A. Fardi-Ilkhchy, **B. Binesh**, *Finite element simulation of the T-shaped ECAP processing of round samples*, Materials Research Express, vol. 5, 056510, 2018.
- **B. Binesh**, M. Aghaie-Khafri, M. Shaban Ghazani, A. Fardi-Ilkhchy, *Microstructure evolution and mechanical properties of thixoformed 7075 aluminum alloy prepared by conventional and new modified SIMA processes*, International Journal of Materials Research, vol. 109, pp. 1122-1135, 2018.
- M. Shaban Ghazani, A. Fardi-Ilkhchy, **B. Binesh**, *Analysis of the plastic strain distribution and damage accumulation during T-shaped equal channel angular pressing*, Transactions of the Indian Institute of Metals, 2018. <https://doi.org/10.1007/s12666-018-1387-8>
- A. Fardi-Ilkhchy, **B. Binesh**, M. Shaban Ghazani, *Effect of Pressure on Microstructure and Cooling Curves of A356 Aluminum Alloy During Solidification*, Transactions of the Indian Institute of Metals, vol. 72, pp. 2319-2327, 2019.

○ **ISC papers:**

- **B. Binesh**, S. Mirzaei, A. Taghi-Ahari, *Effect of bonding temperature on the microstructure and electrochemical corrosion behavior of TLP bonded AISI 304L stainless steel*, Journal of Welding Science and Technology of Iran, vol. 14, pp. 73-87, 2022.
- S. Mosadegh, M. Aghaie-khafri, **B. Binesh**, *Hot Workability and Processing Map of High Gd Content Mg-Gd-Zn-Zr-Nd Alloy*, Iranian Journal of Materials Forming, vol. 8, pp. 44-53, 2021.
- **B. Binesh**, A. Jazayeri-Gharehbagh, H. Arouni, *A Study on crystallization mechanism and effects of heat treatment on the structure and magnetic properties of CoFeSiB amorphous ribbons*, Journal of Mechanical Engineering, Tabriz University, Vol. 40, No. 2, pp. 1-10, 2011.
- **B. Binesh**, A. Jazayeri-Gharehbagh, A. Foroughi, *Microstructure evolution and mechanical properties of TLP bonded joint of IN-738LC superalloy using MBF-20 amorphous foil*, Journal of Advanced Materials in Engineering, vol. 35, pp. 123-137, 2016.
- **B. Binesh**, A. Jazayeri-Gharehbagh, A. Foroughi, *Effects of bonding temperature and time on the microstructure and mechanical properties of TLP bonded IN-738LC superalloy using MBF-15 amorphous foil*, Journal of Mechanical Engineering, vol. 47, pp. 11-20, 2016.

- A. Jazayeri Gharehbagh, S. Mirzaei, H. Arouni, **B. Binesh**, *Effect of planar flow casting parameters on the dimensional specifications of amorphous Co-based unitika foils*, Journal of Advanced Materials in Engineering, Vol. 64, pp. 1-9, 2013.
- R. Bakhtiari, A. Jazayeri-Gharehbagh, M. Kiani, **B. Binesh**, *A study on effects of heat treatment on the magnetic properties of $Fe_{78}Si_9B_{13}$ amorphous ribbons*, Journal of Metallurgy Engineering, Ferdowsi University, Vol. 23, No. 2, pp. 1-10, 2012.
- **B. Binesh**, M. Aghaie-Khafri, *Recrystallization and Coarsening Kinetics of 7075 Al Alloy during Conventional and New Modified SIMA processes*, Journal of Mechanical Engineering, Tabriz University, Vol. 47, No. 2, pp. 11-20, 2017.
- **B. Binesh**, M. Aghaie-Khafri, M. Daneshi, *Simulation and experimental study of severe plastic deformation of 7075 Al alloy processed by repetitive upsetting-extrusion*, Modares Mechanical Engineering, Vol. 17, pp. 323-332, 2017.
- S.A. Hosseini-Moradi, **B. Binesh**, M. R. Yazdanpanah, *Experimental study and simulation of semi-constrained groove pressing of interstitial free steel sheet*, Modares Mechanical Engineering, Vol. 19, pp. 1781-1791, 2019.

o **Conference papers:**

- **B. Binesh**, A. Taghi-Ahari, *Effect of Bonding Parameters on Microstructure of Transient Liquid Phase*, The 7th International Conference on Materials Engineering and Metallurgy, Tehran, Iran, 9-10 October 2018.
- **B. Binesh**, A. Jazayeri-Gharehbagh, A. Foroughi, S. Mirzaie, *Mechanical properties and microstructural evolution of TLP bonded IN738LC superalloy using MBF-15 and MBF-20 amorphous foils*, The 4th National Gas Turbines Conference, Iranian University of Science and Technology, Iran, 6 and 7 October 2015.
- **B. Binesh**, M. Aghaie-Khafri, *Semi-solid processing of 7075 aluminum alloy using strain induced melt activation*, The 8th Congress and 3rd International Conference on Materials Engineering and Metallurgy, Tarbiat Modares University, Tehran, Iran, 18-19 November 2014.
- **B. Binesh**, A. Jazayeri-Gharehbagh, *Microstructural evolution during transient liquid phase bonding of IN-738LC Ni-based superalloy using MBF15 amorphous filler metal*, The 8th congress and 3rd International Engineering Materials and Metallurgy Conference, Tarbiat Modares University, Tehran, Iran, 18-19 November 2014.
- **B. Binesh**, A. Jazayeri-Gharehbagh, *A Study on processing and characterization of BNi2 nickel-base amorphous brazing foil*, The 2nd International and The 7th Joint Conference of Iranian Metallurgical Engineering and Iranian Foundrymen Scientific Societies, University of Semnan, Semnan, Iran, 30-31 October 2013.

- **B. Binesh**, A. Jazayeri-Gharehbagh, H. Arouni, *Processing of MBF-15 amorphous brazing foil by planar flow casting method*, The 2nd International and The 7th Joint Conference of Iranian Metallurgical Engineering and Iranian Foundrymen Scientific Societies, University of Semnan, Semnan, Iran, 30-31 October 2013.
- **B. Binesh**, A. Jazayeri-Gharehbagh, *Production of amorphous brazing foils used in aerospace industry by planar flow casting method*, The 1st National Conference on Advanced Materials in Aerospace and Energy Industries, Materials and Energy Research Center, Karaj, Iran, 17 and 18 October 2012.
- **B. Binesh**, H. Arouni, A. Jazayeri-Gharehbagh, S. Mirzaie, *Melt spinning and planar flow casting processes for production of amorphous and Nano-crystalline ribbons*, The 2nd National Conference on Defense Applications of Nano Science, Emam Hosein University, 14 and 15 February 2012.
- **B. Binesh**, M. Aghaie-Khafri, *A study on the effect of heat treatment on microstructure of MAR-M302 cobalt based superalloy*, The 9th National Conference on Surface Engineering and Heat Treatment, Iran University of Science and Technology, Tehran, Iran, 13-14 may 2008.
- **B. Binesh**, A. Jazayeri-Gharehbagh, S. Mirzaie, *Processing of thin amorphous Ribbon by melt spinning based on Reynolds equation*, The 3rd Joint Conference of Iranian Metallurgical Engineering and Iranian Foundrymen Scientific Societies, University of Kerman, Kerman, Iran, 17-18 November 2009.
- S. Mirzaie, A. Jazayeri-Gharehbagh, A. Beitollahi, S. G. Shabestari, **B. Binesh**, *Production of amorphous and nanocrystalline magnetic alloys using chill block melt spinning process*, International Conference of Nano Technology, University of Tehran, November 2009.
- S. Mirzaie, A. Jazayeri-Gharehbagh, **B. Binesh**, *Processing of unitika amorphous and finemet nanocrystalline ribbons by melt-spinning and planar flow casting methods*, The 4th Joint Conference of Iranian Metallurgical Engineering and Iranian Foundrymen Scientific Societies, Iran University of science and Technology, Tehran, Iran, 15-16 November 2010.

o **Patent:**

- A. Jazayeri-Gharehbagh, **B. Binesh**, S. Mirzaie, H. Arouni, Design and manufacturing of planar flow casting (PFC) nozzle for production of wide amorphous metallic foils, 2012 (in Iran).
- A. Jazayeri-Gharehbagh, **B. Binesh**, S. Mirzaie, R. Bakhtiari, M. Kiani, Planar flow casting nozzle for production of thin metallic foils directly from the melt, 2010 (in Iran).

• Teaching experiences

- Welding Metallurgy
 - Metal forming
 - Fundamental of casting
 - Solidification of metals
 - Mechanical metallurgy
 - Physical metallurgy
 - Characterization and analysis methods in materials
 - Powder metallurgy
 - Materials science
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• Research projects and experiences

- *Study, feasibility and acquisition of technical knowledge of production of metal-to-ceramic laboratory joint*, Localization of metallic materials, 2019.
 - *The effect of heat treatment on magnetic properties of Fe-based and Co-based amorphous alloys*, Technology Development Institute (TDINS), ACECR, 2008-2010.
 - *Technology of wide amorphous magnetic ribbons by planar flow casting*, Technology Development Institute (TDINS), ACECR, 2009-2011.
 - *Study on consumption market of rapidly solidified ribbons*, Technology Development Institute (TDINS), ACECR, 2012-2013.
 - *Processing of Nickel-Based amorphous brazing foils by planar flow casting method*, Technology Development Institute (TDINS), ACECR, 2011-2013.
 - *Microstructural evolution of TLP bonded IN 738 Nickel-based superalloy*, Technology Development Institute (TDINS), ACECR, 2013.
 - *Brazing of INCONEL 738 Nickel-based superalloy using produced MBF-15 and BNi2 amorphous foils*, Technology Development Institute (TDINS), ACECR, 2013-2015.
 - *Standard codification of 09ch16N4B, 300M and HY-TUF aerospace steels*, Iranian Defense Standard Center, 2011-2012.
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• Research interests

- Semi-solid processing
- Severe plastic deformation

- TLP bonding
 - Mechanical properties of materials
 - High temperature alloys
 - Amorphous and nanocrystalline materials
 - Soft magnetic materials
 - Rapid solidification
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• *Trainings*

- **Materials Manufacturing processes**, Institute of Welding Science and Technology Development, Tehran, Iran, September 2015.
 - **Principle of Engineering Materials Selection**, Institute of Welding Science and Technology Development, Tehran, Iran, February 2014.
 - **Advanced Materials Analysis Methods**, Casting Society of Iran, Tehran, Iran, November 2011.
 - **Visual Welding Inspection**, ASNT Level I & II, Iranian Institute of Welding and Nondestructive Testing, June 2008.
 - **Radiographic Film Interpretation**, ASNT Level I & II, TWI Persia, May 2008.
 - **WPS & PQR According to ASME SEC. IX**, Aria Azmoon Sanat, July 2008.
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• *Computer Skills*

- Minitab (Design of Experiments)
 - Auto Cad
 - ANSYS (Metallurgical Applications)
 - Photoshop, Ms Office, ...
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• *Languages*

- Turkish (Native)
- Persian (Native)
- English (Excellent)