Mehdi Shaban Ghazani, PhD

Associate Professor of Materials Science and Engineering

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Personal Information:

Name: Mehdi

Last name: Shaban Ghazani

Gender: Male

Date of birth: 1981

Place of birth: Tabriz, East Azerbaijan, Iran

Nationality: Iranian

Education:

B.Sc. in Materials Science and Engineering, Industrial Metallurgy, Sahand University of Technology, Tabriz, Iran. Dissertation: Casting of copper and copper alloys.

M.Sc. in Materials Science and Engineering, Processing and Characterization of Metallic Materials, Sahand University of Technology, Tabriz, Iran. Dissertation: Production of bulk ultra-fine grained and nanostructured plain low carbon steel through severe plastic deformation.

Ph.D. in Materials Science and Engineering, Hot deformation and thermomechanical processing of metallic materials, Sahand University of Technology, Tabriz, Iran. Dissertation: Effect of thermomechanical parameters on restoration processes in Ti modified austenitic stainless steel.

Professional Membership:

Member of Iranian Metallurgical Engineering's Society, Iran.

Member of Iron and Steel Society of Iran.

Areas of Interests:

Thermomechanical Processing of Metals and Alloys

Sever Plastic Deformation (SPD)

Finite Element Simulation of Metal Forming Processes

Microstructural Simulation during Metal Forming

Ultra-Fine Grained Steels

Recovery and Recrystallization Phenomena

Teaching Experience:

Non-Ferrous Alloys

Advanced Materials

Solidification Laboratory

Metal Forming Laboratory

Welding Metallurgy

Technical English for Students of Materials Science

Heat treatment of Steels

Physical Metallurgy

Materials Science

Thermal Physics

Analytical Chemistry

Casting of Ferrous Alloys

Pattern Making Laboratory

Mechanical Metallurgy Laboratory

Powder Metallurgy

Principles of Solidification

Awards and Distinctions:

Selected Researcher, Sahand University of Technology, Tabriz, IRAN, 1389.

Selected Researcher, Sahand University of Technology, Tabriz, IRAN, 1391.

Selected Researcher, Sahand University of Technology, Tabriz, IRAN, 1392.

Third honor BSc Student at Faculty of Materials Science and Engineering, Sahand University of Technology, 1384.

First honor MSc Student at Faculty of Materials Science and Engineering, Sahand University of Technology, 1388.

References:

Professor Beitallah Eghbali, Department of Materials Science and Engineering, Sahand University of Technology, Tabriz, Iran.

Professor Siyamak Hossein Nejad, Department of Materials Science and Engineering, Sahand University of Technology, Tabriz, Iran.

Professor Alireza Akbari, Department of Materials Science and Engineering, Sahand University of Technology, Tabriz, Iran.

Journal Papers:

[1] Determination of Critical Conditions for Dynamic Recrystallization of Micro-alloyed Steel, Materials Science and Engineering A, Vol. 527, 2010, pp. 4320-4325.

[2] Dynamic Strain Induced Transformation of Austenite to Ferrite during High Temperature Extrusion of Low Carbon Steel, Materials Transactions, Vol. 52, No. 1, 2011, pp. 8-11.

[3] Warm Deformation Microstructure of a Plain Carbon Steel, Journal of Iron and Steel Research International, Vol. 19, 2012, pp. 47-52.

[4]Effect of Integrated Extrusion-Equal Channel Angular Pressing Temperature on Microstructural Characteristics of Low Carbon Steel, Materials Science and Technology, Vol. 27, No. 12, 2011, pp. 1809-1813.

[5] Characterization of Austenite Dynamic Recrystallization under Different Z Conditions in a Microalloyed Steel, Journal of Materials Sciences & Technology, Vol. 27, No. 4, 2011, pp. 359-363.

[6] Effect of Hot Torsion Parameter on the Development of Ultrafine Ferrite Grains in a Microalloyed Steel, Journal of Iron and Steel Research International, Vol. 19, 2012, pp. 47-52.

[7] Pressure Induced Martensitic Transformation in a Plain Carbon Steel, Materials Science and Technology, Vol. 27, No. 10, 2011, pp. 1559-1601.

[8] Warm Deformation of Low Carbon Steel using Forward Extrusion-Equal Channel Angular Pressing Technique, Journal of Iron and Steel Research International, Vol. 20, No. 2, 2013, pp. 68-71.

[9] Finite Element Simulation of Cross Channel Extrusion (Cross-ECAP) Process, Computational materials science, Vol. 74, 2013, pp. 124-128.

[10] Finite Element Simulation of Flow Localization during Equal Channel Angular Pressing, Transactions of Indian Institute of Metals, Vol. 70, No. 5, 2017, pp. 1323-2328.

[11] Evaluation of the Kinetics of Dynamic Recovery in AISI 321 Austenitic Stainless Steel using Hot Flow Curves, Transactions of Indian Institute of Metals, Vol. 70, No. 7, 2017, pp. 1755-1761.

[12] Kinetics and Critical Conditions for Initiation of Dynamic Recrystallization during Hot Compression Deformation of AISI 321 Austenitic Stainless Steel, Metals and Materials International, Vol. 23, No. 5, 2017, pp. 964-673.

[13] Plastic Deformation Characteristics of the Rotary ECAP with Two Different Routes, Transactions of Indian Institute of Metals, Vol. 70, No. 10, 2017, pp. 2719-2724.

[14] The Effect of Inner Corner Radius of ECAP Die on Strain Distribution and Damage Accumulation in Deformed Sample, Transactions of Indian Institute of Metals, Vol. 71, No. 4, 2018, pp. 971-976.

[15] Effect of post deformation annealing on the microstructure and mechanical properties of cold rolled AISI 321 austenitic stainless steel, Materials Science and Engineering: A, Vol. 736, 2018, pp. 364-374.

[16] Characterization of the hot deformation microstructure of AISI 321 austenitic stainless steel, Materials Science and Engineering: A, Vol. 730, 2018, pp. 380-390.

[17] Finite element simulation of the T-shaped ECAP processing of round samples, Materials Research Express, Vol. 5, No. 5, 056510.

[18] Analysis of the Plastic Strain Distribution and Damage Accumulation during T-Shaped Equal Channel Angular Pressing, Transactions of the Indian Institute of Metals, 2018, Published Online.

[19] A Ductile Damage Criterion for AISI 321 Austenitic Stainless Steel at Different Temperatures and Strain Rates, Arabian Journal for Science and Engineering, Vol. 43, 2018, pp. 4855-4861.

[20] 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, 2018, Published Online.

[21] Microstructure evolution and mechanical properties of thixoformed 7075 aluminum alloy prepared by conventional and new modified SIMA processes, International Journal of Materials Research, 2018, Published Online.

[22] Production of Bulk Ultrafine Grained Steel through Severe Plastic Deformation, Materials Science Forum, Vols. 667-669, 2011, pp. 583-588

[23] Finite Element Simulation of ECAP with Back Pressure and Investigation on the Replacement with Die having Inclined Top Surface, Advanced Processing in Materials Engineering, Vol. 7, No. 4, 2014, pp. 33-39.

[24] 3D Finite Element Study of Temperature Variations during Equal Channel Angular Pressing, Journal of Advanced Materials and Processing, Vol. 2, No. 1, 2014, pp. 47-54.

[25] Prediction of Critical Stress and Strain for the onset of Dynamic Recrystallization in Plain Carbon Steels, Iranian Journal of Materials Science and Engineering, Vol. 12, No. 1, 2015, pp. 52-58.

[26] Microstructure and Mechanical Properties of Nanostructured Plain Low Carbon Steel Produced by Integrated Extrusion Equal Channel Angular Pressing, Journal of New Materials, Vol. 6, No. 2, 2016, pp. 55-64.

[27] Fabrication of ultra-fine grained plain low carbon steel through dynamic strain induced transformation during integrated extrusion equal channel angular pressing, Journal of Advanced Materials in Engineering (Esteghlal), Vol. 34, No. 4, 2016, pp. 73-85.

[28] Plastic deformation of 7075 Aluminum Alloy using Integrated Extrusion-Equal Channel Angular Pressing, Journal of Advanced Materials and Processing, Vol. 4, No. 1, 2016, pp. 30-37.

[29] Finite Element Study on the Development of Damage and Flow Characteristics in Al7075 Alloy during Ex-ECAP, Modeling and Numerical Simulation of Material Science, Vol. 3, 2013, pp. 27-32.

[30] Finite element simulation of the groove pressing of aluminum alloy, Modeling and Numerical Simulation of Material Science, Vol. 4, No. 1, 2014, pp. 32-36.

۳۱- مروری بر روش های مختلف اعمال تغییر شکل پلاستیک شدید، مجله مهندسی متالورژی – بهار ۱۳۸۹.

۳۲- روش جدید در فراوری فولاد کم کربن با ساختار دوپلکس فریتی-مارتنزیتی، مجله مهندسی متالورژی و مواد دانشگاه فردوسی مشهد، پذیرفته شده برای چاپ.

*[33] **M. Shaban**, "Deformation Homogeneity of Pre-Extruded AA 7075 Alloy during subsequent ECAP", Emerging Materials Research, Accepted for publication, 2020.*

*[34] **M. Shaban**, B. Eghbali, "Prediction of Post-deformation Recrystallization Kinetics in AISI 321 Austenitic Stainless Steel Using Double-Stage Hot Compression", Journal of Materials Engineering and Performance, Vol. 28, 2019, 3597-3575.*

*[35] N. Tahmasebizad, M. T. Hamedani, **M. Shaban**, Y. Pazhuhanfar, "Photocatalytic activity and antibacterial behavior of TiO_2 coatings co-doped with copper and nitrogen via sol–gel method", Journal of Sol Gel Science and Technology, 2019, Published Online.*

*[36] **M. Shaban**, B. Eghbali, "Modeling the flow behavior of AISI 321 austenitic stainless steel using a simple combined phenomenological method", Mechanics of Materials, Vol 137, 2019, pp. 103-108.*

*[37] A. Fardi-Ilkhchy, B. Binesh, **M. Shaban**, "Effect of Pressure on Microstructure and Cooling Curves of A356 Aluminum Alloy During Solidification", Transactions of the Indian Institute of Metals, Vol. 72, 2019, pp. 2319–2327.*

*[38] **M. Shaban, "**Plastic Deformation Characteristics of Continuous Confined Strip Shearing Process Considering the Deformation Homogeneity and Damage Accumulation", Iranian Journal of ,aterials Forming, Vol. 6, No. 1, 2019, pp. 32-43.*

۳۹- **مهدی شبان غازانی**، بررسی تاثیر ضریب کارسختی ماده بر مشخصه های تغییر شکل نمونه در فرآیند پرس در کانالهای زاویه دار هم مقطع، مچله مهندسی متالورژی، تایید شده برای چاپ، ۱۳۹۸.

۴۰- **مهدی شبان غازانی** ، کاربرد ترکیبی از اکستروژن و پرس در کانالهای زاویه دار هم مقطع در فرآوری مواد فلزی ریز دانه و نانوساختار، مجله مواد نوین، تایید شده برای چاپ، ۱۳۹۸.

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*[42] Hadi Irani, **Mehdi Shaban Ghazani**, "Effect of grain refinement on tensile properties and electrochemical behavior of Fe-18.5% Cr ferritic stainless steel", Materials Chemistry and Physics, vol. 251, 2020, pp. 1-7.*

*[43] **Mehdi Shaban Ghazani**, Hadi Irani, Mohammad Hasan Mohitfar, "Effect of processing by high temperature Ex-ECAP on the microstructure, work hardening behavior and electrochemical properties of Ti-Nb microalloyed steel", Materials Chemistry and Physics, vol. 271, 2021, pp . 124952.*

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