

Name: Nabil KHAROUA

Rank: Maitre de Conference A

Department: Mechanical Engineering

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Educational Profile:

- Doctorat Science/PhD in Mechanical Engineering, Université Constantine 1, Algeria
- Magister in Mechanical Engineering, Université Constantine 1, Algeria
- Diplome Ingénieur d'Etat Université Constantine 1, Algeria

Honors and Distinctions

- 2021 - Honored by the Ministry of Higher Education and Scientific Research for having the best profile among Assistant Professors promoted to Associate Professor in Algeria.
- 2014 - Honored by the Mechanical Engineering Department, at The Petroleum Institute of Abu Dhabi, for the remarkable research activities.
- 2011 - Filtration Award, for best-published journal paper "Kharoua et al., 2010. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 224(2), pp. 119-128", from the Process Division of the Institution of Mechanical Engineers, UK.
- 1999 - Honored by University of Constantine, Algeria, for being the best student in the Department of Mechanical Engineering (industrial maintenance) during the period 1996-1999.

Scientific Activities & Membership of Scientific Societies

- American Society of Mechanical Engineers ASME (2014-2017)
- Society of Petroleum Engineers SPE (2015-2017)

List of Current Research Projects

- PRFU 2022 (University-Training Research Projects)/ code A11N01ES250120220001 / member

List of patents

1. MERIBOUT, Mahmoud; KHEZZAR, Lyes; KHAROUA, Nabil; AL HOSANI, Esra. INLINE DEMULSIFICATIONDEVICE. US 2022/0258074 A1. World Intellectual Property Organization (International Bureau).
https://patentscope.wipo.int/search/en/detail.jsf?docId=US371831556&_cid=P21-L8ZQZS-08084-1

List of Journal Publications

1. Adeyemi, I., Kharoua, N., Khezzar, L., Meribout, M., AlHammedi, K., 2022, Review of confined swirling flows and bluff body impacts on flow and heat transfer characteristics, Chemical Engineering Research and Design (Q1), Vol:187, Pages: 359-386, ISSN:

2. Adeyemi, I., Meribout, M., Khezzar, L., Kharoua, N., AlHammadi, K., 2022. Numerical assessment of ultrasound supported coalescence of water droplets in crude oil. *Ultrasonics Sonochemistry (Q1)*, 88, 106085.
3. Adeyemi, I., Meribout, M., Khezzar, L., Kharoua, N., AlHammadi, K., 2022. Effect of piezoelectric transducer material type on ultrasound assisted coalescence of water-in-oil emulsion. *Procedia Computer Science*, 203, 264-271.
4. Meribout, M., Mekid, S., Kharoua, N., Khezzar, L., 2021. Online Monitoring of Structural Materials Integrity in Process Industry for I4.0: A Focus on Material Loss through Erosion and Corrosion Sensing. *Measurement (Q1)*. <https://doi.org/10.1016/j.measurement.2021.109110>
5. Song, J., Kharoua, N., Khezzar, L., AlShehhi, M.S., 2021. Numerical Simulation of Turbulent Swirling Pipe Flow with an Internal Conical Bluff Body. *Fluid Dynamics & Materials Processing (Q4)*, 17(2), 455-470.
6. Kharoua, N., Khezzar, L., Nemouchi, Z., 2020. LES Study of Contrasting Behaviour of Pulsating Plane Impinging Jets for Heating and Cooling Applications. *International Communications in Heat and Mass Transfer (Q1)*. <https://doi.org/10.1016/j.icheatmasstransfer.2020.104833>
7. Meribout, M., Shehzad, F., Ghendour, N., Kharoua, N., Khezzar, L., AlHosani, E., 2020. Multiphase Flow Meters Targeting Oil & Gas Industries. *Measurement (Q1)*. <https://doi.org/10.1016/j.measurement.2020.108111>
8. Meribout, M., Shehzad, F., Kharoua, N., Khezzar, L., 2020. Gas-liquid Two-Phase Flow Measurement by Combining a Coriolis Flowmeter with a Flow Conditioner and Analytical Models. *Measurement (Q1)*. <https://doi.org/10.1016/j.measurement.2020.107826>
9. Meribout, M., Shehzad, F., Kharoua, N., Khezzar, L., 2020. An Ultrasonic-based Multiphase Flow Composition Meter. *Measurement (Q1)*. <https://doi.org/10.1016/j.measurement.2020.107806>
10. Tianxing, Z., Alshehhi, M., Khezzar, L., Xia, Y., Kharoua, N., 2020. Experimental Investigation of Confined Swirling Flow and Its Interaction with a Bluff Body. *Journal of Fluids Engineering (Q2)*, 142, 011102/1-11.
11. Liang, G. Islam, MD., Kharoua, N., Simmons, R., 2018. Numerical study of heat transfer and flow behavior in a circular pipe tube fitted with varying arrays of winglets vortex generators. *International Journal of Thermal Sciences (Q1)*, 134, 54-65.
12. Kharoua, N., Khezzar, L., Nemouchi, Z., 2018. LES study of the combined effects of groups of vortices generated by a pulsating turbulent plane jet impinging on a semi-cylinder: Different forcing frequencies. *International Journal of Thermal Sciences (Q1)*, 133,273-283.
13. Kharoua, N., Khezzar, L., AlShehhi, M.S., 2018. The interaction of confined swirling flow with a conical bluff body: Numerical simulation. *Chemical Engineering Research and Design (Q1)*, 136, 207-218.
14. Xu, Y., Islam, M.D., Kharoua N., 2018. Experimental study of thermal performance and flow behaviour with winglets vortex generators in a circular tube. *Applied Thermal Engineering (Q1)*, 135,257-268.
15. Kharoua, N., Khezzar, L., AlShehhi, M.S., 2017. Flow Dynamics of a Plane Jet Impinging on a Slotted Plate: Large Eddy Simulation. *Journal of Applied Fluid Mechanics (Q2)*, 10(4), 1211-1222.
16. Kharoua, N., AlShehhi, M.S., Khezzar, L., Filali, A., 2017. CFD Prediction of Black Powder Particles' Deposition in Vertical and Horizontal Gas Pipelines. *Journal of Petroleum Science and Engineering (Q1)*, 149, pp.822-833.
17. Kharoua, N., Khezzar, L., Nemouchi, Z., AlShehhi, M.S., 2017. LES Study of the Combined Effects of Groups of Vortices Generated by Forced Turbulent Plane Jet Impinging on a Semi-Cylinder. *Applied Thermal Engineering (Q1)*, 114,948-960.

18. Xu, Y., Islam, M.D., Kharoua, N., 2017. Numerical Study of Winglets Vortex Generator Effects on Thermal Performance in a Circular Pipe. *International Journal of Thermal Sciences (Q1)*, 112, pp.304-317.
19. Kharoua, N., Khezzar, L., 2016. Effects of Geometry, Temperature, and Inlet Conditions on the Flow Split in Spheroids Manifold. *International Journal of Petrochemical Science & Engineering*, 1(4), 00022. DOI:10.15406/ipcse.2016.01.00022.
20. Kharoua, N., Khezzar, L., Nemouchi, Z., 2016. Large Eddy Simulation of Flow and Heat Transfer in Multiple Round Impinging Jets. *Heat Transfer Research (Q3)*, 47(4), pp. 359-382.
21. Kharoua, N., AlShehhi, M.S., Khezzar, L., 2016. Effects of Fluid Flow Split on Black Powder Distribution in Pipe Junctions. *Advanced Powder Technology (Q1)*, 27, pp.42-52.
22. Filali, A., Khezzar, L., AlShehhi, M.S., Kharoua, N., 2016. 1D Approach for Modeling Transport and Deposition of Black Powder Particles in Gas Network. *Journal of Natural Gas Science & Engineering (Q1)*, 28, pp.241-253.
23. Kharoua, N., AlShehhi, M.S., Khezzar, L., 2015. Prediction of Black Powder Distribution in Junctions using the Discrete Phase Model. *Powder Technology (Q1)*, 286, pp.202-211.
24. Khezzar, L., Kharoua, N., Kiger, K., 2015. Large Eddy Simulation of Liquid Plunging Jets Processes. *Progress in Nuclear Energy (Q2)*, 85, pp.140-155.
25. Kharoua, N., Khezzar, L., Saadawi, H., 2013. Flow Modeling in Horizontal Three-Phase Separators: A Population Balance Model Approach. *American Journal of Fluid Dynamics*, 3(4), pp.101-118.
26. Kharoua, N., Khezzar, L., 2013. Large Eddy Simulation Study of Turbulent Flow around Smooth and Rough Domes. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science (Q2)*, 227(12), pp.2686-2700.
27. Benhacine, A., Kharoua, N., Khezzar, L., Nemouchi, Z., 2012. Large Eddy Simulation of a Slot Jet Impinging on a Convex Surface. *Heat and Mass Transfer (Q2)*, 48(1), pp.1-15.
28. Kharoua, N., Khezzar, L., 2011. Flow Asymmetry in Symmetric Multiple Impinging Jets: A Large Eddy Simulation Approach. *The Journal of Engineering Research-SQU (Q3)*, 48(2), pp. 40- 48.
29. Kharoua, N., Khezzar, L., Nemouchi, Z., 2011. Study of the Pressure Drop and Flow Field Prediction in Standard Gas Cyclone Models Using the Granular Model. *International Journal of Chemical Engineering (Q3)*, Volume 2011 (2011), Article ID 791218, 11 pages doi:10.1155/2011/791218.
30. Kharoua, N., Khezzar, L., Nemouchi, Z., 2010. Hydrocyclones for De-Oiling Applications: A Review. *Petroleum Science and Technology (Q2)*, 28(7), pp.738-755.
31. Kharoua, N., Khezzar, L., Nemouchi, Z., 2010. CFD Study of the Parameters Affecting Oil-water Hydrocyclone Performance. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering (Q2)*, 224(2), pp.119-128.
32. Kharoua, N., Talbi, K., Nemouchi, Z., Boulahlib, M.S., 2007. Effet du Maillage et des Schémas de Discrétisation sur les Résultats de Simulation de L'écoulement dans un Cyclone Dépoussiéreur. *Sciences et Technologie A*, 26, University of Constantine, Algeria, pp.17- 26.

List of Conference Papers

1. Adeyemi, I., Kharoua, N., Meribout, M., AlHammedi, K., Khezzar, L., 2022, Online Microwave Assisted Coalescence of Binary Water Drops in Crude Oil, Publisher: IEEE

2. Adeyemi, I., Meribout, M., Khezzar, L., Kharoua, N., AlHammadi, K., 2022, Influence of Constant Wave and Pulsatile Electric Field on Water Droplets Coalescence in Crude Oil Emulsions, Publisher: IEEE
3. Kharoua, N., Semmari, H., Korichi, H., Haroun, M., Islam, M., 2022. Numerical Simulation of a Canadian Well with One Circumferential Row of Internal Vortex Generators. In: Fluids Engineering Division Summer Meeting 85833, V001T01A009, August 03–05 (online).
4. Boukail, I., Fenchouch, L., Kharoua, N., Semmari, H., 2022. Effects of the Soil Properties on Canadian Wells Performance: Numerical Simulation. In: Proceedings of CONV-22: Int. Symp. on Convective Heat and Mass Transfer June 5 – 10, Izmir, Turkey.
5. Kharoua, N., Semmari, H., Korichi, H., Haroun, M., 2021. Numerical Simulation of a Canadian Well with Several Circumferential Rows of Internal Vortex Generators. In: ASME. FEDSM2021, Volume 1: Aerospace Engineering Division Joint Track; Computational Fluid Dynamics, V001T02A010, August 10–12 (online).
6. Seo, N. Kharoua, N., Khezzar, L., Alshehhi, M., Meribout, M., 2019. Multiphase Flow Simulation of In-Line Gas-Liquid Separator for Multiphase Metering. In: ASME-JSME-KSME 2019 Joint Fluids Engineering Conference AJKFLUIDS2019, July 28-August 1, San Francisco, CA, USA.
7. Kharoua, N., Khezzar, L., Nemouchi, Z., 2018. Effects of the Forcing Frequency on Pulsating Impinging Jet Behavior and the Boundary Layer on the Target Curved Wall. In: The 5th Joint US-European Fluids Engineering Summer Conference FEDSM2018, July 15-20, Montreal, Quebec, Canada.
8. Song, J., Kharoua, N., Khezzar, L., AlShehhi, M.S., 2018. Rans Modelling of a Swirling Flow Interacting with a Conical Bluff Body. In: The 5th Joint US-European Fluids Engineering Summer Conference FEDSM2018, July 15-20, Montreal, Quebec, Canada.
9. Zhang, T., Kharoua, N., Khezzar, L., AlShehhi, M.S., Bojanampati, S., 2018. Experiments and Large Eddy Simulation of Swirling Flow in a Pipe. In: The 5th Joint US-European Fluids Engineering Summer Conference FEDSM2018, July 15-20, Montreal, Quebec, Canada.
10. Kharoua, N., Khezzar, L., Nemouchi, Z., 2018. Les of Pulsating Cooling Impinging Jet under Different Forcing Frequencies. In: Fourth International Conference on Energy, Materials, Applied Energetics and Pollution, ICEMAEP2018, April 29-30, Constantine, Algeria.
11. Kharoua, N., Khezzar, L., Nemouchi, Z., 2017. LES Study of Pulsating Impinging Jets for Heating and Cooling Applications. In: Congrès Algérien de Mécanique CAM2017, November 26-30, Constantine, Algeria.
12. Liang, G., Didarul, Md. I. Kharoua, N., 2017. Experimental Study of Heat Transfer Enhancement with Winglets inside a Tube. In: 13th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics HEFAT2017, July17-19, Portorož, Slovenia.
13. Kharoua, N., Khezzar, L., AlShehhi, M.S., Meribout, M., 2016. Numerical Simulation of a New Gas-Liquid Separator. In: Third International Conference on Energy, Materials, Applied Energetics and Pollution ICEMAEP2016, October 30-31, Constantine, Algeria.
14. Kharoua, N., Khezzar, L., AlShehhi, M.S., 2016. Flow Dynamics of an Impinging Plane Jet Generating Slot Tones. In: Third International Conference on Energy, Materials, Applied Energetics and Pollution ICEMAEP2016, October 30-31, Constantine, Algeria.
15. Kharoua, N., Khezzar, L., Nemouchi, Z., AlShehhi, M.S., 2015. Study of the Interaction between Coherent Structures and Boundary Layer in a Forced Turbulent Plane Jet Impinging on a Semi-Cylinder. In: 2ème Conférence Internationale de Mécanique (ICM'15), November 25-26, Constantine, Algeria.

16. Filali, A., Khezzer, L., AlShehhi, M.S., Kharoua, N., 2015. A one Dimensional Model to Track the Black Powder Dispersion and Deposition within Gas Transmission Network. In: Abu Dhabi International Petroleum Exhibition and Conference, November 9-12, Abu Dhabi, UAE.
17. Kharoua, N., AlShehhi, M.S., Khezzer, L., 2014. Numerical Simulation of Solid-Phase Split at Junctions in Particle Laden Pipe Flow. In: ASME 2014 International Mechanical Engineering Congress & Exposition IMECE2014, November 14-20, Montreal, Canada.
18. Qaroot, Y.F., Kharoua, N., Khezzer, L., 2014. Discrete Phase Modeling of Oil Droplets in the Gas Compartment of a Production Separator. In: ASME 2014 International Mechanical Engineering Congress & Exposition IMECE2014, November 14-20, Montreal, Canada.
19. Kharoua, N., Khezzer, L., Nemouchi, Z., AlShehhi, M.S., 2014. Large Eddy Simulation of Forced and Unforced Plane Jets Impinging on a Convex Surface. In: ASME 2014 International Mechanical Engineering Congress & Exposition IMECE2014, November 14-20, Montreal, Canada.
20. Zhuowei, L., Kharoua, N., Khezzer, L., 2013. Large Eddy Simulation of a Forced Turbulent Jet Impacting on a Semi-Cylinder. In: ASME 2013 Fluids Engineering Summer Meeting FEDSM2013, July 7-11, Incline Village, Nevada, USA.
21. Kharoua, N., Khezzer, L., Saadawi, H., 2013. CFD Simulation of Three-Phase Separator: Effects of Size Distribution. In: ASME 2013 Fluids Engineering Summer Meeting FEDSM2013, July 7-11, Incline Village, Nevada, USA.
22. Al-Kodssi, I., Khezzer, L., Kharoua, N., 2013. Pressure Drop and Heat Transfer in a Sinusoidal Wavy Pipe. In: 4ème Edition du Congrès Algérien de Mécanique, CAM 2013, November 25-28, Mascara, Algeria.
23. Kharoua, N., Khezzer, L., 2012. Multiphase Flow Mal-distribution in Spheroids of Oil Industry. In: Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition IMECE2012, November 9-15, Houston, Texas, USA.
24. Benhacine, A., Nemouchi, Z., Khezzer, L., Kharoua, N., 2012. Numerical Study of The Mean and Filtered Characteristics of Turbulent Jets Impinging on Convex and Flat Surfaces Using LES. In: Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition IMECE2012, November 9-15, Houston, Texas, USA.
25. Kharoua, N., Khezzer, L., Saadawi, H., 2012. Using CFD to Model the Performance of Retrofit Production Separators in Abu Dhabi. In: The Abu Dhabi International Petroleum Exhibition & Conference, November 11-14, Abu Dhabi, UAE.
26. Kharoua, N., Khezzer, L., Saadawi, H., 2012. Application of CFD to Debottleneck Production Separators in a Major Oil Field in the Middle East. In: Annual Technical Conference and Exhibition, October 8-10, San Antonio, Texas, USA.
27. Zhuowei, L., Kharoua, N., Redjem, H., Khezzer, L., 2012. RANS and LES Simulation of a Swirling Flow in a Combustion Chamber with Different Swirl Intensities. In: Proceedings of CHT-12 ICHMT International Symposium on Advances in Computational Heat Transfer, July 1-6, Bath, England.
28. Benhacine, A., Nemouchi, Z., Khezzer, L., Kharoua, N., 2012. Etude des comportements dynamiques moyens et filtrés d'un jet turbulent impactant une paroi courbée par la LES. In : First National Congress on Aeronautics (NaCA2012), University Constantine 1, May 02-03, Constantine, Algeria.
29. Khezzer, L., Kharoua, N., Nemouchi, Z., 2012. Large Eddy Simulation of Turbulent Flow around a Hemispherical Dome. In: 8th Seminar of Mechanics JM'08, Military Polytechnic School (EMP), Bordj El Bahri, April 10-11, Algiers, Algeria.
30. Kharoua, N., Khezzer, L., Nemouchi, Z., 2011. Flow Characteristics around Bluff Bodies. In : Congrès Algérien de Mécanique, November 14-17, Guelma, Algeria.

31. Kharoua, N., Khezzar, L., Nemouchi, Z., 2011. Large Eddy Simulation of Multiple Round Impinging Jets. In: Proceedings of the ASME 2011, International Mechanical Engineering Congress & Exposition IMECE2011, November 11-17, Denver, Colorado, USA.
32. Kharoua, N., Khezzar, L., 2010. Numerical Simulation of Multiple Impinging Jets. In: International Conference on Applied Mechanics, Materials, and Manufacturing, ICAMMM 2010, Department of Mechanical and Industrial Engineering, December 13-15, Sultanate of Oman.
33. Kharoua, N., Khezzar, L., Nemouchi, Z., 2010. Large Eddy Simulation of Oil-Water Separation inside a Hydrocyclone. In: Thermal and Environmental Issues in Energy Systems, May 16-19, Sorrento, Hilton Sorrento Palace, Italy.
34. Kharoua, N., Khezzar, L., Benhacine, A., Nemouchi, Z., 2010. Numerical Study of the Heat Transfer in a Slot Jet Impinging on a Semi-Cylinder. In: Thermal and Environmental Issues in Energy Systems, May 16-19, Sorrento, Hilton Sorrento Palace, Italy.
35. Kharoua, N., Molki, A., Seibi, A.N., Khezzar, L., 2010. Experimental Investigation and Computational Fluid Dynamics of Wind Flow around Hemispherical Domes. In: Second International Conference on Energy Conversion and Conservation, CICME10, April 22-25, El Mouradi Hammamet Hotel (5*), Hammamet – Tunisia.
36. Kharoua, N., Khezzar, L., Nemouchi, Z., 2009. CFD Simulation of Liquid-Liquid Hydrocyclone: Oil/Water Application. In: ASME 2009 Fluids Engineering Summer Meeting (FEDSM2009), August 2-6, Colorado, USA.
37. Kharoua, N., Khezzar, L., Nemouchi, Z., 2009. CFD Prediction of Pressure Drop and Flow Field in Standard Gas Cyclones Models. In: ASME2009 Fluids Engineering Summer Meeting (FEDSM2009), August 2-6, Colorado, USA.
38. Kharoua, N., Khezzar, L., Nemouchi, Z., 2009. CFD Simulation of the Effects of Free Gas on the Flow Behavior inside a Liquid-Liquid Hydrocyclone. In: The Fourth International Conference on Thermal Engineering Theory and Applications, January 12-14, Abu Dhabi, United Arab Emirates.
39. Kharoua, N., Nemouchi, Z., Boulahlib, M.S., Talbi, K., 2008. Sur la Réduction de la Chute de Pression dans un Cyclone Séparateur en Utilisant une Entrée Inclivée. Actes des 6ème Journées de Mécanique de l'Ecole Militaire Polytechnique, April 15-16, Bordj ElBahri, Algiers, Algeria.
40. Kharoua, N., Nemouchi, Z., Boulahlib, M.S., Talbi, K., Kholai, O., 2004. Caractérisation du Champ Aérodynamique dans un Cyclone Dépoussiéreur. 4ème journées de mécanique. Ecole militaire Polytechnique JM-EMP 2004, March 23-24, Algiers, Algeria.