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EDUCATION

Doctorat Science	en Génie Mécanique Energétique, Université Mentouri Constantine, Algérie (2005–2010)
Magister	Chercheur à l'Institut du Pétrole, Abu Dhabi, EAU (2008-2010) Génie Mécanique Energétique, Université Mentouri Constantine, Algérie (2002–2004)
Ingénieur d'état	Génie Mécanique Energétique, Université Mentouri Constantine, Algérie (1996–2002)

EXPERIENCE PROFESSIONNELLE

Depuis 2018	Maitre-Assistant B Département de Génie Mécanique Ecole Nationale Polytechnique de Constantine, Constantine, Algérie
2011 – 2018	Research/Teaching Associate Département de Génie Mécanique Khalifa University of Science and Technology, Abu Dhabi, E.A.U.
2008 – 2010	Research Assistant Department of Mechanical Engineering The Petroleum Institute, Abu Dhabi, E.A.U.
2005 – 2006	Cours sur le logiciel FLUENT pour des étudiants en post-graduation au sein du Département de Génie Mécanique Université Mentouri Constantine, Algérie
2004 – 2007	Ingénieur Control Qualité Direction Management Qualité Ex- Complexe Moteurs&Tracteurs CMT, Constantine, Algérie

HONEURS ET PRIX

- 2014** Honoré par l'Institut du Pétrole, Abu Dhabi, EAU, pour les travaux de recherches remarquables.
- 2011** Filtration Award, pour le meilleur papier publié "Kharoua et al., 2010. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 224(2), pp. 119-128", de la part de **Process Division of the Institution of Mechanical Engineers**, UK.
- 1999** Honoré par l'Université Mentouri Constantine pour être le major de la promotion 1996-1999 au Département de Génie Mécanique (Maintenance Industrielle).

EXPERTISE

- Enseignement**
- Cryogénie et production du froid
 - Thermodynamique.
 - Statique.
 - Mesure en laboratoire.
 - Turbomachines
- Simulation Numérique
Computational Fluid
Dynamics CFD**
- Géométries Complexes **2D** et **3D**
 - Modèles de turbulence **RANS** et **LES**
 - Ecoulements multiphasique (Eulerian models, **PBM**, **DPM** et **DEM**)
 - Calcul parallèle: **HPC** technologies en utilisant **SGE**, **PBS**, Torque, et **LSF**
 - Windows and Linux
 - FORTRAN and C++
 - **ANSYS (FLUENT)** et **Transat**
 - **Solid works**
- Expérimental**
- Installations expérimentales pour écoulements multiphasique
- Sujets étudiés**
- Cyclones et hydrocyclones
 - Jets impactants
 - Ecoulements turbulents autour d'obstacles
 - Ecoulements complexes dans les conduites
 - Plusieurs projets de recherche pour des sociétés pétrolières
- Encadrement**
- Encadrement d'un binôme a l'ENPC
 - Co-encadrement de plusieurs étudiants à l'Institut du Pétrole.
- Reviewer pour des revues réputées**
- Int. J. Heat Mass Transf. **Elsevier**.
 - J. Pet. Sci. Eng. **Elsevier**.
 - Int. J. Therm. Sci. **Elsevier**.
 - App. Math. Model. **Elsevier**.
 - Comput. Chem. Eng. **Elsevier**.
 - App. Acoustics. **Elsevier**.

- Int. J. Pressure Vessels Piping. **Elsevier**.
- Eng. App. Comput. Fluid Mech. **Taylor & Francis**.
- Chem. Eng. Comm. **Taylor & Francis**.
- J. App. Fluid Mech. Isfahan University of Technology.
- Int. J. Chem. React. Eng. De Gruyter.
- Several international conferences

MEMBRE DES ASSOCIATIONS

- Depuis 2014** American Society of Mechanical Engineers ASME
Depuis 2015 Society of Petroleum Engineers SPE

LANGUES

- Arabe** Langue maternelle
Anglais Avancé (IELTS –Score 7)
Français Avancé (certificat DALF C1)

LISTE DES PUBLICATIONS

Revues Internationales

- [1] Liang, G. Islam, M.D., **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.
- [2] **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.
- [3] **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 (Q2), **136**, 207-218.
- [4] 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.
- [5] **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 (Q3), **10**(4), 1211-1222.
- [6] **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.
- [7] **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.
- [8] 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.

- [9] **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.
- [10] **Kharoua, N.**, Khezzar, L., Nemouchi, Z., 2016. Large Eddy Simulation of Flow and Heat Transfer in Multiple Round Impinging Jets. *Heat Transfer Research (Q4)*, **47**(4), pp. 359-382.
- [11] **Kharoua, N.**, AlShehhi, M.S., Khezzar, L., 2016. Effects of Fluid Flow Split on Black Powder Distribution in Pipe Junctions. *Advanced Powder Technology (Q2)*, **27**, pp. 42-52.
- [12] 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 (Q2)*, **28**, pp. 241-253.
- [13] **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.
- [14] Khezzar, L., **Kharoua, N.**, Kiger, K., 2015. Large Eddy Simulation of Liquid Plunging Jets Processes. *Progress in Nuclear Energy (Q2)*, **85**, pp. 140-155.
- [15] **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.
- [16] **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 (Q3)*, **227**(12), pp. 2686-2700.
- [17] 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 (Q3)*, **48**(1), pp. 1-15.
- [18] **Kharoua, N.**, Khezzar, L., 2011. Flow Asymmetry in Symmetric Multiple Impinging Jets: A Large Eddy Simulation Approach. *The Journal of Engineering Research (SQU)*, **48**(2), pp. 40-48.
- [19] **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*, Volume 2011 (2011), Article ID 791218, 11 pages doi:10.1155/2011/791218.
- [20] **Kharoua, N.**, Khezzar, L., Nemouchi, Z., 2010. Hydrocyclones for De-Oiling Applications: A Review. *Petroleum Science and Technology (Q3)*, **28**(7), pp. 738-755.
- [21] **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.
- [22] **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 1, Algeria, pp. 17-26.

Conferences Internationales

- [1] **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. Accepted in The 5th Joint US-European Fluids Engineering Summer Conference FEDSM2018, July 15-20, Montreal, Quebec, Canada.
- [2] Song, J., **Kharoua, N.**, Khezzar, L., AlShehhi, M.S., 2018. Rans Modelling of a Swirling Flow Interacting with a Conical Bluff Body. Accepted in The 5th Joint US-European Fluids Engineering Summer Conference FEDSM2018, July 15-20, Montreal, Quebec, Canada.
- [3] Zhang, T., **Kharoua, N.**, Khezzar, L., AlShehhi, M.S., Bojanampati, S., 2018. Experiments and Large Eddy Simulation of Swirling Flow in a Pipe. Accepted in The 5th Joint US-European Fluids Engineering Summer Conference FEDSM2018, July 15-20, Montreal, Quebec, Canada.
- [4] **Kharoua, N.**, Khezzar, L., Nemouchi, Z., 2018. Les of Pulsating Cooling Impinging Jet under Different Forcing Frequencies. Fourth International Conference on Energy, Materials, Applied Energetics and Pollution, ICEMAEP2018, April 29-30, Constantine, Algeria.
- [5] **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.
- [6] 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, July 17-19, Portorož, Slovenia.
- [7] **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.
- [8] **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.
- [9] **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.
- [10] Filali, A., Khezzar, 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.
- [11] **Kharoua, N.**, AlShehhi, M.S., Khezzar, 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.
- [12] Qaroot, Y.F., **Kharoua, N.**, Khezzar, 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.
- [13] **Kharoua, N.**, Khezzar, 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.
- [14] Zhuowei, L., **Kharoua, N.**, Khezzar, 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.

- [15] **Kharoua, N.**, Khezzar, 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.
- [16] Al-Kodssi, I., Khezzar, 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.
- [17] **Kharoua, N.**, Khezzar, 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.
- [18] Benhacine, A., Nemouchi, Z., Khezzar, 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.
- [19] **Kharoua, N.**, Khezzar, 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.
- [20] **Kharoua, N.**, Khezzar, 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.
- [21] Zhuowei, L., **Kharoua, N.**, Redjem, H., Khezzar, 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.
- [22] Benhacine, A., Nemouchi, Z., Khezzar, 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.
- [23] Khezzar, 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.
- [24] **Kharoua, N.**, Khezzar, L., Nemouchi, Z., 2011. Flow Characteristics around Bluff Bodies. In : Congrès Algérien de Mécanique, November 14-17, Guelma, Algeria.
- [25] **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.
- [26] **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.
- [27] **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.
- [28] **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.
- [29] **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.

- [30] **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.
- [31] **Kharoua, N.**, Khezzar, L., Nemouchi, Z., 2009. CFD Prediction of Pressure Drop and Flow Field in Standard Gas Cyclones Models. In: ASME 2009 Fluids Engineering Summer Meeting (FEDSM2009), August 2-6, Colorado, USA.
- [32] **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.
- [33] **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 Inclinée. Actes des 6ème Journées de Mécanique de l'Ecole Militaire Polytechnique, April 15-16, Bordj El Bahri, Algiers, Algeria.
- [34] **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.

Présentations en Séminaires et Conférences

- [1] Complex Interaction Vortices-Boundary Layer in Pulsating Jets. ANSYS-Fluid Codes User Conference, November 23th, 2017, Dubai, UAE.
- [2] Gas-Solid Flow in Pipe Junctions. Graduate Seminar Lecture. The Petroleum Institute, September 25th, 2016, Abu Dhabi, UAE.
- [3] HPC requirements for parallel simulations of turbulent jets and multiphase flows. PI Workshop on High Performance Computing (HPC). The Petroleum Institute, February 11th, 2016, Abu Dhabi, UAE.
- [4] Using ANSYS FLUENT to Simulate the Behavior of Black Powder in the Gas Industry. ANSYS User Meeting Conference, November 5th, 2014, Abu Dhabi, UAE.
- [5] Study of Gas-Solid Flows in Parts of Pipe Networks Using Computational Methods. ADRAC International R&D Academic Conference & Exhibition, February 24-27, 2014, Abu Dhabi, UAE.
- [6] Large Eddy Simulation of Forced Impinging Jets. ANSYS User Meeting Conference, November 7th, 2013, Dubai, UAE.
- [7] Dynamics of Forced Impinging Jets. Graduate Seminar Lecture, The Petroleum Institute, September 23rd, 2013, Abu Dhabi, UAE.
- [8] CFD Model to Simulate Multiphase Flow in Production Separators. In: ADNOC Research & Development Academic Conference, February 26-28, 2013, Abu Dhabi, UAE.
- [9] Numerical Simulation of Plunging Jets. Graduate Seminar Lecture, The Petroleum Institute, April 25th, 2013, Abu Dhabi, UAE.
- [10] Numerical Simulation of Plunging Jets Using ANSYS FLUENT. Fluent Info day 2012, December 4th, 2012 Abu Dhabi, UAE.
- [11] Etude de l'Aérodynamique dans un Cyclone à l'Aide de FLUENT. Forum FLUENT, Hôtel Mercure, June 13th, 2005, Algiers, Algeria.