

## CURRICULUM VITAE

Name: **Abdelmadjid CHEHHAT**

Date and Place of Birth: **May 1, 1968, in Ouldja, Khenchela**

Nationality: **Algerian**

Family Status: **Married, 4 children**

Personal Address: **Cité 558 lots No. 93C, Kais, Khenchela**

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Current Rank: **Associate Professor A**

Affiliation: **Department of Mechanics, Faculty of Science and Technology, Abbes Laghrour University, Khenchela**

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**OBJECTIVES:** Interested in scientific research in the field of energetics, particularly numerical simulation and analysis of turbulence, and the applications of fluid mechanics in complex geometries, turbomachines, internal combustion engines, combustion, and heat and mass transfer.

### ACADEMIC BACKGROUND AND DEGREES

**December 2019:** Habilitation in Energetic Mechanics, University of Biskra. Grade: Very Honorable (with jury congratulations).

**December 2017:** Ph.D. in Science in Energetic Mechanics, University of Batna 2. Grade: Very Honorable (with jury congratulations).

**September 1998:** Magister in Energetic Mechanics, University of Blida. Grade: Honorable

**July 1992:** State Engineer in Mechanics (Energetics Option), University of Batna. Grade: Very Good.

**July 1987:** Baccalaureate in Mathematics, Abbes Laghrour High School, Batna. Grade: Good.

### PROFESSIONAL EXPERIENCE

**1992-1993:** Part-time teacher, Common Core of Technology, University of Batna.

**1993-1995:** Part-time teacher at Oum El Bouaghi Technical High School.

**1995-1996:** Part-time teacher at the University of Blida.

**1996-1998:** Part-time teacher at Kais Technical High School.

**2000-2001:** Assistant Professor, Department of Mechanics, University of M'sila.

**2001-2008:** Assistant Professor in charge of courses, Department of Mechanics, University of M'sila.

**2008-2011:** Assistant Professor A, Department of Mechanics, University of M'sila.

**2011-2017:** Assistant Professor class "A", University of Khenchela.

**2017-2019:** Associate Professor class "B", University of Khenchela.

**2019 to present:** Associate Professor class "A", University of Khenchela.

### PEDAGOGICAL RESPONSIBILITIES

**2009-2011:** Head of the Energetics program, University of M'sila.

**2018 :** Vice Dean in charge of postgraduate studies, scientific research, and external relations of the Faculty of Science and Technology, Abbes Laghrour University, Khenchela.

**2022:** Head of the Quality Assurance Unit of the Faculty of Science and Technology, Abbes Laghrour University of Khenchela.

### TEACHING SUBJECTS

- Fluid Mechanics (Lectures + Tutorials + Practical Work)

- Turbulence
- Combustion
- Internal Combustion Engines (undergraduate + postgraduate)
- Thermodynamics
- Heat Transfer
- Measurement Techniques and Instrumentation in Fluid Mechanics<sup>26</sup>
- Thermal and Hydraulic Machines
- Strength of Materials
- Rational Mechanics
- Mathematical Analysis
- Technical English

### PHD SUPERVISIONS

Currently supervising; **Samia Boudjaza**, 3rd year Ph.D. in energetics, University of Khenchela, on the topic: *Study of the performance of geothermal energy piles using CFD.*

**Boukhamla Halima**, a second-year doctoral student in energetics at the University of Khenchela, is working on the topic: *“Design of a solar chimney with a variable geometry collector: study of turbulent flow with heat exchange.”*

Similarly, **Bouzida Youcef**, also a second-year doctoral student in energetics at the University of Khenchela, is focusing on the topic: *“CFD-based design of a radial turbine for the solar chimney.”*

### RESEARCH ACTIVITIES

**Since 2006 to present:** Member of the research lab “Laboratory of Studies of Energetic and Industrial Systems” (LESEI), University of Batna<sup>2</sup>.

#### Research Projects and Contributions:

CNEPRU Research Project (2015): Title: “Study of Turbulent Convection in Industrial Applications.” Project Code: J0301320140059. Project Lead: Dr. Mohamed SI-AMEUR.

PRFU Research Project (2019): Title: “Enhancing Automotive Turbocharger Performance Using Computational Fluid Dynamics (CFD).” Project Code: A11N01UN0502201900021.

Project Lead: Dr. Mohamed SI-AMEUR.

PRFU Research Project (2023): Title: “Integration of Radial Turbines in Solar Power Plants: Feasibility Study and CFD-Based Design. «Project Code: A11N01UN40012023000321. Project Lead: **Dr. Abdelmadjid CHEHHAT.**”

#### Other Contributions:

- Member of the scientific committees for several national and international conferences.
- Reviewer for the following journals:
  - International Journal of Mechanical Science (Elsevier)
  - Australian Journal of Mechanical Engineering (Taylor and Francis)
  - Journal of Thermal Engineering (Yildiz Technical University, Open Access Journal)
  - Engineering Review (University of Rijeka, indexed in Clarivate)
  - International Journal of Performability Engineering (USA, indexed in Scopus)

### PUBLICATIONS AND COMMUNICATIONS

#### International Communications

1. Boudjaza Samia, **Chehhat Abdelmadjid**, Rebai Billal, Modeling of a corroded pipeline then repaired with composite material, First International Conference on materials sciences and Applications (ICMSA-23) February, 08- 09,2023, Khenchela, Algeria .
2. Boudjaza Samia, **Chehhat Abdelmadjid**, Rebai Billal, Fluid flow and performances of geothermal energy pile GEP using CFD, 1<sup>st</sup> International Conference on materials sciences and Technology (MATsience-2022) December, 13-15,2022, Khenchela, Algeria
3. **Abdelmadjid Chehhat**, Mouna Maache, Mohamed Si-Ameur, Numerical Study of the Turbulent Air Flow through the Turbocharger Compressor Using Different Rotor Shapes, IEEE 2021 9th International Renewable and Sustainable Energy Conference (IRSEC)**DOI: 10.1109/IRSEC53969.2021.9740730**
4. **Abdelmadjid Chehhat**, Arrif Toufik, Mouna Maache, Computational thermal-fluid coupling analysis of a variable nozzle turbine for solar power generation, European Conference on Renewable Energy Systems (ECRES 2021). The event is going to be organized in Istanbul / Turkey on 21-23 April 2021, <https://www.ecres.net/2021/>
5. **Abdelmadjid Chehhat**, Amara Daas, Semcheddine Derfouf, Nouredine Belghar, The influence of aluminum oxide nanoparticles on the thermal behavior of a heat exchanger, international visio conference on material science and engineering (ICMSE 21), November,17-18<sup>th</sup> 2021, Khenchela, Algeria. [http://www.univ-khenchela.dz/Site%20ICMSE2021/index\\_fichiers/Page602.htm](http://www.univ-khenchela.dz/Site%20ICMSE2021/index_fichiers/Page602.htm)
6. **Chehhat Abdelmadjid** Maache Mouna, Si-Ameur Mohamed, Analyse CFD de l'Effet de la Géométrie du Rotor sur un Ecoulement Tridimensionnel Turbulent de l'Air dans un Turbocompresseur, 1<sup>st</sup> International Symposium on Materials, Energy and Environment (MEE'2020), January 20-21<sup>st</sup>; 2020, El Oued, ALGERIA. <https://mee2020.sciencesconf.org/>
7. **Abdelmadjid CHEHHAT**, Fluid flow and performances In a Variable Geometry Turbine of Diesel Engine Turbocharger Using CFD, 7<sup>th</sup> FCE International conference, 10-13 March 2019, Antalya, Turkey. [www.fce.sakarya.edu.tr](http://www.fce.sakarya.edu.tr)
8. **Abdelmadjid CHEHHAT**, Salim Boulahrouz, Abelaziz Aboudi, Brahim Chermime and Oualid Chahaoui, CFD Modeling of Turbulent Air Flow in Three Different Diffusers Used in a Turbocharger Compressor, International Symposium on Mechatronics and Renewable Energies: ISMRE'2018. El-Oued University, December 10-11, 2018, El-Oued, Algeria. <http://www.univ-eloued.dz/index.php/26-c-universite/c-forums/7415-ismre-2018>
9. A. Daas, **A. Chehhat**, S. Derfouf, N. Belghar, A. Messaoudi, Etude Numérique d'un échangeur à tubes coaxiaux en forme de U utilisant un nano fluide, Fourth International Conference on Energy, Materials, Applied Energetics and Pollution. ICEMAEP'2018, April 29-30, 2018, Constantine, Algeria.
10. A. Abboudi, B. Chermime, O. Chahaoui, S. Boulahrouz, **A. Chehhat**, H. Djebaili, Distribution thermomécanique numérique du frottement dynamique pion-disque, International Symposium on Mechatronics and Renewable Energies : ISMRE'2018. El-Oued University, December 10-11, 2018, El-Oued, Algeria. <http://www.univ-eloued.dz/index.php/26-c-universite/c-forums/7415-ismre-2018>
11. Salim Boulahrouz, **Abdelmadjid Chehhat**, Abdelaziz Aboudi, Chahaoui Oualid, Ghelani Laala, Chermime Brahim, CFD Modeling of Thermophysical Properties Influence on the Heat Transfer in Metal Foam Heat Sinks, International Symposium on Mechatronics and Renewable Energies: ISMRE'2018. El-Oued University, December 10-11, 2018, El-Oued, Algeria. <http://www.univ-eloued.dz/index.php/26-c-universite/c-forums/7415-ismre-2018>

12. Brahim Chermime, Abboudi Abdelaziz, Djebaili Hamid, **Chehhat Abdelmadjid**, Boulehrouz Salim, Modélisation d'une fraise de forme en acier rapide de type HS 18-0-1, International Symposium on Mechatronics and Renewable Energies: ISMRE'2018. El-Oued University, December 10-11, 2018, El-Oued, Algeria. <http://www.univ-eloued.dz/index.php/26-c-universite/c-forums/7415-ismre-2018>
13. Oualid CHAHAOUI, Naoel BRINIS, Abdelaziz ABOUDI, Salim BOULAHROUZ, **Abdelmadjid CHEHHAT**, Comportement non-orthotrope d'une tôle asymétrique, International Symposium on Mechatronics and Renewable Energies: ISMRE'2018. El-Oued University, December 10-11, 2018, El-Oued, Algeria. <http://www.univ-eloued.dz/index.php/26-c-universite/c-forums/7415-ismre-2018>
14. **A. Chehhat**, M. Si-Ameur, Blade Exit Angle Impact on Turbulent Fluid Flow and Performance of Centrifugal Pump, IEEE, 2015. <https://ieeexplore.ieee.org/document/7455001>
15. **A. Chehhat**, M. Si-Ameur, Computational Fluid Dynamics of the Turbulent Air Flow Through a Vaned Diffuser Turbocharger, 6<sup>th</sup> International Scientific Conference on Defensive Technologies (OTEH 2014), 9-10, October 2014, Belgrade, Serbia. <http://www.vti.mod.gov.rs/ntp/rad2014/4-2014/7/7.pdf>
16. Toufik Arrif, Abdelfettah Belaid, Amor Gama, Rida Zarrit, **Chehhat Abdelmadjid**, Numerical simulation study on the heat transfer of a spiral tube receiver designed to a thermal power tower, POWERENG, IEEE- 2013. <https://ieeexplore.ieee.org/document/6635770>
17. **A. Chehhat**, M. Si-Ameur, B. Boumeddane, CFD analysis on the effect of varying number of diffuser vanes on the turbulent air flow through the turbocharger, 15<sup>èmes</sup> Journées Internationales de Thermique - JITH 2011, Tlemcen - Algérie (2011)
18. Bakhti F. Z., Siameur M., **Chehhat A.** Simulation numérique de la convection naturelle laminaire dans une conduite verticale, 13<sup>èmes</sup> Journées Internationales de Thermique – JITH 2007, France (2007) <https://hal.univ-brest.fr/JITH2007/browse/author/sort/count/>
19. **A. Chehhat**, F.Z. Bakhti, M. Si-ameur, Numerical Simulation of free laminar convection in a vertical duct, *CIMA'04, Boumerdès (Algeria) 30-XI / 2-XII-2004*
20. **Chehhat**, B. Boumeddane, R. Hadeif, Numerical simulation of internal aerodynamics of the turbulent engine flow in the admission and compression phase. *MIDITERANIAN COMBUSTION SIMPOSIOM 1999 ANTALYA, TURKEY.*

#### National Communications

1. Boudjaza Samia, **Chehhat Abdelmadjid**, Rebai Billal, Analysis on the change of distance between the outer diameter of the pipe and the pile by the long-term performance of the energy pile, The First National Conference on Mechanical Engineering, Batna, May 10<sup>th</sup> 2023, Algeria
2. Boudjaza Samia, **Chehhat Abdelmadjid**, Rebai Billal, Etude du comportement thermomécanique d'un pieu énergétique par CFD, 1st National Conference of Thermal Engineering on Renewable and Conventional Processes (NCTE'22), on October 25-26, 2022, Batna, Algeria.
3. **Chehhat Abdelmadjid**, Maache Mouna, Si-Ameur Mohamed, Computational Fluid Dynamics of Centrifugal Pump Using Different Impeller Outlet Angles, 1st National Conference of Thermal Engineering on Renewable and Conventional Processes (NCTE'22), on October 25-26, 2022, Batna, Algeria.

4. Amara DAAS, Semcheddine Derfouf, Noureddine Belghar et **Abdelmadjid Chehhat**, Préparation et propriétés structurales de nano-particules métalliques, 1ères Journées Nationales des Sciences des Matériaux (JNSM2021) organisées par l'Université de Batna 2, les 17 et 18 Novembre 2021
5. Toufik ARRIF, **Abdelmadjid CHEHHAT**, Comportement Thermique d'un Récepteur Solaire Cylindrique à inclinaison variable-Etude Numérique, 1ier séminaire sur les Energies Renouvelables et le développement durable, 25-26 Juin 2018, Université de Batna2, Algérie. <http://gm.univ-batna2.dz/event/s%C3%A9minaire-national-sur-les-energies-renouvelables-et-le-d%C3%A9veloppement-durable-snerdd-2018>
6. **Abdelmadjid Chehhat**, B. Boumeddane, Modélisation numérique de l'écoulement turbulent et non stationnaire à l'intérieur d'un cylindre d'un moteur à combustion interne. *COMAGEP 3Tamanrasset*, 28,29 et 30 Mai 1998.
7. **A. Chehhat**, B. Boumeddane, Modélisation numérique de l'écoulement turbulent compressible dans les deux phases admission et compression d'un moteur à CI. *SIPE4 BECHAR 10-12- Nov 1998*.

#### International Publications

1. Toufik Arrif, **Abdelmadjid Chehhat**, Essam Abo-Serie and Adel Benchabane, Numerical Study of Natural Convection in Square Tilted Solar Cavity Considering Extended Domain, *FDMP*, vol.14, no.4, pp.223-242, 2018, Tech Science Press. [http://www.techscience.com/fdmp/2018/v14n4\\_index.html](http://www.techscience.com/fdmp/2018/v14n4_index.html)
2. Salim Boulahrouz, Yvan Avenas, **A. CHEHHAT**, CFD Simulation of Heat Transfer and Fluid Flow within Metallic Foam in Forced Convection Environment, *Mechanics and Mechanical Engineering* Vol. 21, No. 3 (2017) 611–635. [http://kdm.p.lodz.pl/articles/2017/3/21\\_3\\_14.pdf](http://kdm.p.lodz.pl/articles/2017/3/21_3_14.pdf)
3. **A. Chehhat**, M. Si-Ameur, B. Boumeddane, E.Abo-Serie, S. Boulahrouz, Numerical investigation of diffuser solidity effect on turbulent airflow and performance of the turbocharger compressor, *Applied and Computational Mechanics* 10 (2016) 79–96. <https://www.kme.zcu.cz/acm/acm/article/view/318>
4. **A. Chehhat**, M. Si-Ameur, Blade Exit Angle Impact on Turbulent Fluid Flow and Performance of Centrifugal Pump, *IEEE*, 2015. <https://ieeexplore.ieee.org/document/7455001>
5. **Chehhat Abdelmadjid**, Si-Ameur Mohamed, Boumeddane Boussaad, CFD analysis of the Volute Geometry Effect on the Turbulent Air Flow through the Turbocharger Compressor, *Energy Procedia* Volume 36, 2013, Pages 746-755, [doi.org/10.1016/j.egypro.2013.07.087](https://doi.org/10.1016/j.egypro.2013.07.087)
6. <https://www.sciencedirect.com/science/article/pii/S1876610213011739>
7. F. Z. BAKHTI, M. SI AMEUR, and **A. CHEHHAT**, Free Convection in a Vertical Duct: Numerical Study Heat Transfer Research, 2011, Vol. 42, No. 6. <http://dl.begellhouse.com/references/46784ef93dddff27,4018a5882fbf68bf,3fd8f47733a07792.html>

### **National Publications**

Toufik Arrif, Adel Benchabane, **Abdelmadjid Chehhat**, Abdelfetah Belaid, Amar Rouag, Simulation numérique des pertes thermiques par convection dans un tube hélicoïdal d'un récepteur solaire cylindrique, Journal of Applied Engineering Science and Technology. (2018) 4(2): 177-187. <http://revues.univ-biskra.dz/index.php/jaest/article/view/3894>

### **Books**

**Chehhat Abdelmadjid**, Moteurs à combustion Interne cours et exemples résolus. Edition Universitaire Européenne, 2021, ISBN-13 : 978-620-3-42513-0, ISBN-10 : 6203425133, EAN : 9786203425130  
<https://my.editions-ue.com/catalogue/details/fr/978-620-3-42513-0/moteurs-%C3%A0-combustion-interne?search=Capitalisation%20des%20exp%C3%A9riences%20sur%20des%20mutuelles%20sociales%20au%20Burkina%20Faso%20Cas%20de%20la%20r%C3%A9gion%20de%20la%20Boucle%20du%20Mouhoun>

**Chehhat A., Si-Ameur M. Boumeddane B.** (2018) Turbulent Air Flow Investigation Through the Vaned Diffuser Turbocharger Using CFD. Chapter 6 In: Aloui F., Dincer I. (eds) Exergy for A Better Environment and Improved Sustainability 1. Green Energy and Technology. Springer, Cham [https://link.springer.com/chapter/10.1007/978-3-319-62572-0\\_6](https://link.springer.com/chapter/10.1007/978-3-319-62572-0_6)

<b>ADDITIONAL INFORMATION</b>
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**Languages:** - Arabic: **native**. - French: **very good**. - English: **Good written skills and average spoken skills**.