

Nihel Chekir¹

Personal Information



Name		Nihel Chekir Ben Salem
Date of Birth and location		22/07/1974 at Bizerte (Tunisia)
Nationality		Tunisian
Marital status		Married (4 children)
Grade		Associate Professor
Institute		National Engineering School of Gabes
Research Laboratory		Applied Thermodynamic Laboratory
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ORCID ID		https://orcid.org/0000-0001-7497-9432
Web of Science ResearcherID:		AAE-9001-2019
Researchgate ID:		https://www.researchgate.net/profile/Nihel_Chekir
Google scholar:		https://scholar.google.fr/citations?user=vSOPM2oAAAAJ&hl=fr
Scopus		Author ID: 48160922600
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¹ Updated end of January 2023

Academic qualification

April 2021	University Accreditation (Habilitation) in chemical process engineering	H. U.
	Engineering school of Gabes, Tunisia, www.enig.rnu.tn	
	Subject : Integration of renewable energy sources in industrial processes Discussed on April 10 2021 Mention : Very honorable.	
Juin 2007	Doctorate degree in energetic engineering	PHD
	Engineering school of Monastir, Tunisia, www.enim.rnu.tn	
	Subject : Modelling and sizing of an absorption chiller working with saturated hydrocarbon mixtures. Supervisor : Pr. Ahmed Bellagi Discussed on June 30 2007 Mention : Very honorable.	
July 1998	Engineering diploma	Engineering
	Engineering school of Monastir, Tunisia, www.enim.rnu.tn	
	Subject : Experimental study of an isotherm and non isotherm jet by Laser imagery Supervisor : Pr. Habib Ben Aissia Discussed on July 10 1998.	
Juin 1993	Baccalaureate diploma	Baccalaureate
	Technical college in Gabes	
	Mathematical	

Professional experience

15/04/2022 - now	Associate Professor (Maître de conférences) in mechanical engineering department, National Engineering School of Gabes, Tunisia (Fluid dynamic, thermal transfer, renewable energies) www.enig.rnu.tn
01/07/2019 – now	Coordinator of the Mechanical Engineering Research Master Degree in the National Engineering School of Gabes
15/12/2017 – 14/12/2021	Member of scientific Council of the National Engineering School of Gabes
09/2015 – now	Associate professor (Maître assistante) in mechanical engineering department
09/2011 - 08/2015	Associate professor in chemical process engineering department

09/2010 – 08/2011	Assistant professor in chemical engineering department National Engineering School of Gabes, Tunisia (Thermodynamic, fluid dynamic, thermal transfer, applied thermodynamic)
09/2004 - 08/2010	Assistant Technologist Institute of High Technical studies of Ksar Helal, Tunisia (Physics, Energy management) www.isetkh.rnu.tn
09/2001- 08/2004	Assistant teacher High Institute of Biotechnology of Monastir, Tunisia. www.isbm.rnu.tn
09/2000- 08/2001	Assistant teacher Sciences faculty of Monastir, Tunisia www.fsm.rnu.tn
09/1999- 02/2000	Vacant Assistant teacher Institute of High Technical studies of Sousse, Tunisia
09/1998- 06/1999	Vacant Assistant teacher Sciences faculty of Monastir, Tunisia

Teaching experience

Up to June 2022, I have taught many courses and practical works for engineering students and research master students :

Course	Hourly load
Renewable Energy	540 H
Thermal Transfer	750 H
Fluid dynamic	370 H
Industrial Installations	120 H
Thermodynamic	360 H

The supervision of researchers and students are as follow:

Supervision	Number
Defended Theses	01
Theses in progress	02
Master (old regime)	01
LMD Research Masters	02
LMD Masters in progress	02
Academic End of studies projects	1
Industriel End of studies projects	8

Journal Publications

1. "Tunisian Geothermal Potential for Desalination", **Chekir N.**, Hassen D., **Water-Energy-Nexus in the Ecological Transition**, pp. 237–240 (2022).
Publisher: Springer International Publishing.
<https://doi.org/10.1007/978-3-031-00808-5>
2. "What is the relationship between the coronavirus crisis and air pollution in Tunisia?" **N. Chekir**, Y. Ben Salem, **Euro-Mediterranean Journal for Environmental Integration**, 6(1), 3 (2021).
<https://doi.org/10.1007/s41207-020-00189-5>
3. "Geothermal energy for sustainable water desalination: Case of Tunisia", **N. Chekir**, **Water and Energy International**, 63, p27-40, 2020.
4. "Entropy generation in multi-stage flash desalination plants", A. Snoussi, **N. Chekir**, A. Ben Brahim, **International Journal of Energy and Environmental Engineering**, 11, pages 327–339 (2020).
DOI: [10.1007/s40095-020-00337-1](https://doi.org/10.1007/s40095-020-00337-1)
5. "Alternative refrigerants for solar absorption air-conditioning", **N. Chekir**, A. Snoussi, A. Ben Brahim, **International Journal of Air-Conditioning and Refrigeration**, Vol. 28, No. 01, (2020).
DOI: [10.1142/S2010132520500017](https://doi.org/10.1142/S2010132520500017)
6. "Modeling of cold room driven by an absorption refrigerator in the south of Tunisia: A detailed energy and thermodynamic analysis", A. Hmida, **N. Chekir**,..., A. Ben Brahim, **Journal of Cleaner Production**, Vol 211 (2019) 1239-1249.
DOI: [10.1016/j.jclepro.2018.11.219](https://doi.org/10.1016/j.jclepro.2018.11.219)
7. "Performance of an Absorption Refrigerator Using a Solar Thermal Collector", A. Hmida, **N. Chekir**, A. B. Brahim, **International Journal of Electrical, Electronic and Communication Sciences**, Vol: 11, (10), 2018.
DOI: 10.5281/zenodo.1475032
8. "Modélisation d'une machine par absorption et Bilan frigorifique d'une chambre froide", A. Hmida, **N. Chekir**,... **International Journal of Scientific Research & Engineering Technology (IJSET)**. 78-84. Copyright IPCO-2016. ISSN: 2356-5608.
<http://ipco-co.com/IJSET/GEEE-206/14.pdf>
9. "Performance improvement of a butane/octane absorption chiller", **N. Chekir**, A. Bellagi, **Energy** Vol 36 (2011) 6278-6284.
DOI: [10.1016/j.energy.2011.07.001](https://doi.org/10.1016/j.energy.2011.07.001)

10. "Comparison of a Butane/Octane Absorption Machine with an Ammonia/Water One", N. **Chekir**, A. Bellagi, 2010, **Journal of Engineering and Applied Science** 5(1):45-49.
DOI: 10.3923/jeasci.2010.45.49
11. "Simulation of an absorption refrigeration machine working with alkanes mixtures", N. **Chekir**, Kh. Mejri, A. Bellagi, **International Journal of Refrigeration** 29 (2006) 469–475.
DOI:10.1016/j.ijrefrig.2005.09.016
12. "Impact liquid vapour equilibrium modelling on the simulation performance of an absorption chiller", N. **Chekir**, A. Bellagi 2006, **Journal of Engineering and Applied Science** 1(4):468-475.
DOI=jeasci.2006.468.475

Conference papers

- ✓ "Climate Change in Tunisian higher education", **Nihel Chekir**, Yassine Ben Salem, an oral presentation at the **4th Euro-Mediterranean Conference for Environmental Integration (EMCEI 2022)**, Springer, held in Sousse on 01–04 November 2022, will be soon published in ASTI series (indexed in Scopus).
- ✓ "Solar thermal desalination plant: Simulation and performance optimization", Dhouha Hassen, **Nihel Chekir**, an oral presentation at the **4th Euro-Mediterranean Conference for Environmental Integration (EMCEI 2022)**, Springer, held in Sousse on 01–04 November 2022, will be soon published in ASTI series (indexed in Scopus).
- ✓ "Thermal and exergetic study of multi-effect distillation system coupled with solar thermal energy", D. Hassen, **N. Chekir**, oral presentation at the **12th International Renewable Energy Congress**, held online from 26th to 28th of October 2021 (IREC 2021).
DOI: 10.1109/IREC52758.2021.9624844
- ✓ "Solar multi-effect desalination unit", D. Hassen, **N. Chekir**, T. Khir, an oral presentation at the **First International Advanced Modeling of Thermodynamic Systems Seminar (AMTS2021)**, held online from 10 to 11th of March 2021.
- ✓ "Performance optimization of a solar multi effect desalination plant", Dhouha Hassen, **Nihel Chekir**, Taher Khir, an oral presentation at the **3rd Euro-Mediterranean Conference for Environmental Integration (EMCEI 2021)**, Springer, held online on 10–13 June 2021, will be soon published in ASTI series (indexed in Scopus).
- ✓ "Corona-Virus crisis has cleaned up the air", **Nihel Chekir**, Yassine Ben Salem, an oral presentation at the **3rd Euro-Mediterranean Conference for Environmental**

Integration (EMCEI 2021), Springer, held online on 10–13 June 2021, will be soon published in ASTI series (indexed in Scopus).

- ✓ “Tunisian geothermal potential for desalination”, **N. Chekir**, D. Hassen, an oral presentation at the 3rd **Water & Energy Nexus 2020** Conference, Springer, held online between 2 and 4 December 2020, will be soon published in ASTI series (indexed in Scopus).
- ✓ “Small-Scale Solar Stirling Engine Generator”, **N. Chekir**, Y. B. Salem, I. Marzougui, an oral presentation at the 6th IEEE International Energy Conference **ENERGYCON 2020**. Added to **IEEE Xplore in October 29, 2020**.
- ✓ “Performance of an Absorption Refrigerator Using a Solar Thermal Collector”, A. Hmida, **N. Chekir**, A. B. Brahim, **world academy of science engineering and technology**. Published in **International Journal of Energy and Power Engineering**, Vol: 12, No:10, 2018.
DOI: 10.5281/zenodo.1475032
- ✓ “Solar absorption refrigerator”, A. Hmida, **N. Chekir**, A. B. Brahim. An oral presentation at the International Conference on Green Energy Conversion Systems **2017 (GECS)**. Publication added to **IEEE Xplore**: 12 October 2017.
DOI:10.1109/GECS.2017.8066193
- ✓ “Performance of ammonia water absorption machine 2017 ”, A. Hmida, **N. Chekir**,... an oral presentation at the International Congress on Energetic and Environmental Systems held in Djerba from 17 to 19 November 2017 (**ICEES 2017**). Publication in *Termotehnica* p46-54. ISSN-L 1222-4057. Online: ISSN 2247-1871.
<http://www.revistatermotehnica.agir.ro/articol.php?id=2938>
- ✓ “New absorption air-conditioner”, **N. Chekir**, an oral presentation at the 5th International Renewable Energy Congress, held from 25 to 27th of March 2014 à Hammamet (**IREC 2014**).
DOI: 10.1109/IREC.2014.6826938
- ✓ “ Impact of the equilibrium on the distillation column conception”, **N. Chekir**, an oral presentation and a publication in the proceeding of publication in the Acts of the congress of the French thermal society, **SFT 25-28**, may 2004, Presqu’île de Giens, France.
- ✓ “Simulation of an absorption chiller working with alkane mixtures”, **N. Chekir**, an oral presentation at The second TSS International Conference on Advances in Mechanical Engineering, Sousse, Tunisia **ICAME 2004**
- ✓ “Impact of the equilibrium on the absorption chiller conception”, **N. Chekir**, a poster presented at the 7th **National Conference of Physique research**, Hammamet, Tunisia 2003.

- ✓ “Modeling the liquid-vapor equilibria by four different approaches”, **N. Chekir**, an oral presentation at the 17th **IUPAC** Conference on Chemical Thermodynamics, Rostock, Germany 2002.
- ✓ “Modeling the liquid-vapor equilibria by two different approaches”, **N. Chekir**, an oral presentation at The first TSS International Conference on Advances in Mechanical Engineering, Hammamet, Tunisia **ICAME 2002**.
- ✓ “Modeling the separation inside the absorption chiller by four approaches”, **N. Chekir**, an oral presentation at the **Arab-African Congress in air conditioning**, Cairo, Egypt 2001.
- ✓ “Modelling the separation inside the generator of an absorption chiller”, **N. Chekir**, a poster presented at the Tunisian days on fluids and transfer, held at Mahdia, Tunisia from 4 to 6th of November 2000, **JTET 2000**.

Scientific Journal Committee membership

Review

Up to January 2023, I have been involved in 30 reviews for papers indexed Web Of Science and Scopus:

- 21 reviews for the journal Energy (Elsevier);
- 2 for the Journal of the Brazilian Society of Mechanical Sciences and Engineering (Springer);
- 6 for the Euro-Mediterranean Journal for Environmental Integration (Springer);
- 1 for International Journal of Green Energy (Taylor & Francis).

Editorial committee

Since July 2021, I am an Associate Editor for the journal **Technology in Horticulture** of Maximum Academic Press, an international journal focusing on applied horticultural sciences and technology.

Certifications and Training

- Training « **Finance Climate for climate change adaptation** » held the 5 and 6th of February 2022 at Hammamet, Tunisia an activity of the National Forum of Climate Change Adaptation Actors organized by the German International Cooperation (**GIZ**) in collaboration with the ministry of local affairs and environment.
- Training « **The Water-Energy-Food-Ecosystems Nexus: From Research to Practice** » organized by PRIMA and GIZ from 06/12 to 08/12/2021.

- Training « **NEX-LABS Tailored Training for Public Authorities** » held the 24, 25, 29, 30th of November and the 2nd of December 2021 for the project ENI-CBCMED elaborated by BERYTECH.
- Training « **Network management, networking and partnerships** » elaborated the 02 and 03rd of November 2021 at Sfax, an activity of the National Forum of Climate Change Adaptation Actors organized by the German International Cooperation (**GIZ**) in collaboration with the ministry of local affairs and environment.
- Training course “**Our Energy Future**”, an online non-credit course authorized by University of California San Diego and offered through Coursera certified on 9th of July 2021.
- Training “**Climate change Effect Adaptation**”, an activity of the National Forum for Climate Change adaptation Actors (**AdaptCC**), held in Sousse (Tunisia) on 25 and 26 of Mai 2021 and organized by German development cooperation (**GIZ**) with partnership of the Tunisian Ministry of local affairs and environment.
- Training **EU301 - Devenir Coordinateur d'un Projet Européen de Recherche et d'Innovation** ensured by education, mobility, research and innovation program online from November 09 to 13, 2020.
- Training **EU302 [EMORI-Horizon2020TN]** ; Online - Tunis du 29/06/2020 au 03/07/2020 ; **Gérer un Projet Européen de Recherche et d'Innovation** ensured by education, mobility, research and innovation program.
- Training **EU201 - Devenir Partenaire d'un Projet Européen de Recherche et d'Innovation** : How to be partner in European research and innovation projects ensured by education, mobility, research and innovation program in Gabes from November 11 to 13, 2019.
- Training **EU101 - Comprendre et repérer les projets Européens de R et I** : Understand and spot european projects ensured by education, mobility, research and innovation program in Gabes on November 7 and 8, 2019.
- **Project Management CBHE Erasmus+** according to the norm ISO 21500: Certificate delivered by Pr. Adel Alimi, director of Erasmus+ Tunisia following the workshop of November 4th, 2019.
- Solar collective hot water : online training organized by the National Agency of Energy Management **ANME** and the National Institute of solar Energy **INES** of France held on 18/12/2018.
- Generalities of collective solar energy: online training organized by the National Agency of Energy Management **ANME** and the National Institute of solar Energy **INES** of France held on 25/06/2018.
- Issues and strategic governance in education: provided by Houssine Dridi, Professor and director of the program unit at the University of Quebec in Montreal on 03/12/2018.

- Initiation to conduct a scientific debate: provided by Marc Legrand, Professor at the Research Institute on the Teaching of Mathematics in 02/10/2018.
- Workshop « Solar Process Heat Potential and Applications in Tunisia for Expert in Research» in the project Diffusion of Innovative Thermal Solar Application in Industry” (**DASTII**), realized by German International Cooperation (**GIZ**) on February 25 and 26, 2014 at Tunis.
- Personal Strategic Planning: Certified training of the International Academy of Personal Training and Leadership Development in November 2012.

Seminars & Workshops

- **INVESTMED Training Programme**, The sustainable Business Management INVESTMED, from 30 May to 15 September 2022. This training programme is funded by ENI CBC MED.
- **Cybersecurity & privacy day** : Participation at the second day of cybersecurity sensibilization organized the 25th of January 2022 by the Centre de Calcul El-Khawarizmi et le Réseau National Universitaire RNU.
- **COST** : Member of Working Group 2 of the recently initiated NEXUSNET Cost Action (European Cooperation in Science and Technology).
- **JIA'21** : Participation at the second edition of the African engineering day organized on 27 and 28th December 2021 (African University Network).
- **ASLP 2021** : Participation at the workshop “The Role of Collective Leadership for Achieving the Sustainable Development Goals”, an activity of the Africa Science Leadership Programme (ASLP) in collaboration with the Egyptian Young Academy of Sciences (EYAS) held online from 06 to 08th of September 2021.
- Participation to the Webinaire **Academic Publishing & Enhancing Research Effectiveness** organized by SPRINGER Nature the 24th of November 2020.
- **LTA 2020**: Workshop « Systèmes Energétiques et Environnementaux : Etudes, Approches et Modélisations » organized by the applied Thermodynamic laboratory, the first of February 2020 at the National Engineering of Gabes.
- **PGE 2019** : Closing Seminar of the support program for environmental governance of industrial activity of Gabes (PGE Gabes) : February 27 and 28 2019.
- **TRES 2018** : Participation at the third-round table on solar energy TRES held on July 12, 2018 at CRDA of Gabes organized by GIZ.
- **SERA 2015**: Seminar on Renewable Energies and Applications.
- **ERTA 2013**: Renewable Energies, Theory and Applications organized by the Tunisian Association of Sciences and Research and the High Institute of Technological studies from 10 to 12 May 2013.

Responsibilities, committee membership

- ↪ Member of the **Quality Committee** of the National School of Engineers of Gabes since September 15, 2021.
- ↪ Head of the "**Communication and Dissemination**" implementation committee of the "PAQ-Development of the Strategic Management of Higher Education Establishments" project **PAQ-DGSE** of ENIG since March 2021.
- ↪ Member of the "**Governance and Institutional Autonomy**" Execution Committee of the "PAQ-Development of the Strategic Management of Higher Education Establishments" project **PAQ-DGSE** of ENIG since March 2021.
- ↪ Member of the **steering committee** of the University of Gabes, partner of the South Mediterranean Tunisian Maintenance Center of Excellence (SM-TMC) project whose coordinator has been the University of Sfax since March 2021.
- ↪ Member of the National Forum of Actors in Adaptation to Climate Change **Adapt-CC** as a university expert since February 2021. This is an activity within the framework of the capacity building project and support for the execution of the policy National Climate Change Adaptation Program in Tunisia implemented jointly by the Ministry of Local Affairs and the Environment in collaboration with GIZ.
- ↪ Member of the technical committee of the **DZENERGY International Conference** which took place in Algeria on March 26-27, 2021.
- ↪ Member of the **organizing committee** of the First International Seminar of Advanced Modeling Thermodynamic Systems **AMTS 2021** organized online by the Higher Institute of Applied Sciences and Technology (ISSAT) in Gabes on March 10-11, 2021.
- ↪ Since 2013 member of the Applied Thermodynamics Research Laboratory.
- ↪ Participation in the organization of the 1^{er} Workshop « Energetic and environmental Systems : Study, Approaches et Modeling » February 1st 2020 at ENIG, Gabes.
- ↪ Member of the ENIG accreditation committee at IEAQA, Instance Nationale d'Évaluation, d'Accréditation et d'Assurance Qualité (since September 2019).
- ↪ Contribution to the organization of the first edition of the Mechanical Engineer Day at ENIG on November 05, 2016 and organization of the second edition of the Mechanical Engineer Day on December 8, 2018 (Chairman of the organizing committee).
- ↪ Member of the scientific committee of the first (IEES 2017) and the second energetic and environmental systems congress (IEES 2019).

- ↪ Member of the commission for the preparation of the application file for the Master's degree in mechanical-energy engineering in 2018.
- ↪ Member of the teaching staff who provided continuing education for the senior staff of the Tunisian chemical group within the framework of an agreement between the Tunisian Chemical Group and the National School of Engineers of Gabès for the academic year 2018/2019.
- ↪ Preparation of a framework agreement between the ElHamma vocational training and employment promotion center and the Gabès national engineering school for the 2018/2019 academic year. This agreement allows students in the final years to benefit from the center's equipment to do practical work on Renewable Energies.
- ↪ Member of the Local Consultation Chamber CCL of Gabès established as part of the activities of the Environmental Governance Project, PGE Gabès, funded by the European Union and carried out by Expertise France since May 2017.
- ↪ Since December 2018, member of the executive board and vice-president of the Tunisian Association for Science and Research: ATSR.
- ↪ Member of the following associations: Tunisiat, Communication and Reconstruction Association, ENIG Sport Association.

Project management

- ✓ Member of the steering committee (University of Gabès) of the ERASMUS Mendus project **Design of Water Energy Nexus for Sustainable Development Master programme** (WEN4SD) coordinated by the Politechnical University of Valencia, Spain.
- ✓ Member of the steering committee (University of Gabès) of the Horizon Europe project **LoCEL-H₂** coordinated by the Atomic Energy and Alternative Energies Commission CEA, France. Topic HORIZON-CL5-2022-D3-01-05 for 48 months starting from January 2023.
- ✓ Project "Solidaires" of the Tunisian Association for Science and Research, ATSR, funded by the United Nations Development Programme (UNDP) in 2022.
- ✓ Project "Tamassok Tollabi" of the Tunisian Association for Science and Research, ATSR, funded by the United Nations Development Programme in 2020.
- ✓ Project « Jeunes actifs, jeunes créateurs » of the Tunisian Association for Science and Research, ATSR, funded by the United Nations Development Programme and the organisation Search for Common Ground in 2020.

Project set up

- Project AFRUMOB, identified ID 101082853, submitted on 17th of February 2022 for the programme ERASMUS2027 ERASMUS-EDU-2022-CBHE.
- Project AFRENE, identified ID 101082842, submitted on 17th of February 2022 for the programme ERASMUS2027 ERASMUS-EDU-2022-CBHE.
- Project SYN-BIOS, identified l'identifiant ID 101036665, submitted on 27th of January 2021 for the programme Horizon 2020 H2020-LC-GD-2020.
- Project AFRESUS, identified ID 101036436, submitted on 27th of January 2021 for the programme Horizon 2020 H2020-LC-GD-2020.
- Project SolarBlockchain, identified ID 101037082, submitted on 27th of January 2021 for the programme Horizon 2020 H2020-LC-GD-2020.
- Project XWIND2H2ISLANDS, identified ID 101007227, submitted on 29th of April 2020 for the programme H2020-JTI-FCH-2020-1.
- Project Solar cold room for oasis horticultural products, submitted on 06/01/2020 for the programme PEER Cycle 9 of USAID.

Personal skills

Linguistic skills

Mother language (s)	Arabic				
Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
French	C2	C2	C2	C2	C2
English	B2	C2	B2	B2	B2
	Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user <i>English Test and certificate from British Council</i>				

Communication & organization skills

Excellent