

Name: Hamza SEMMARI

Rank: Maitre de Conférences A

Department: Mechanical Engineering

Email Address: hamza.semmari@enp-constantine.dz,
hamza.semmari@gmail.com



Educational Profile:

- Phd in Engineering sciences, University of Perpignan Via Domitia UPDV, France.
- Master in Mechanical Engineering, University of M'hamed Bougara Boumerdes, Algeria.
- Bachelor in Mechanical Engineering, University of M'hamed Bougara Boumerdes, Algeria.

Honors and Distinctions

- **Energy Transformation Expert**, RENAC- Germany.
- **Pan Arab Certified Energy Management Professional** program, PACEM- RCREEE Egypt
Jun 2020 – Jun 2022
- Laureate for the Program of Help to create an innovative company in Mediterranean
« **PACEIM 2012** », Marseille, France.
- Price of the best innovative project « **FAST FINDER** », Doctorial 2011, Canet en Roussillon, Perpignan, France.
- First class honour in the national competition for access to postgraduate training aboard, Boumerdes 2009, Algeria.

Scientific Activities & Membership of Scientific Societies

A- Reviewing

- ✓ Applied Energy
- ✓ Applied Thermal Engineering
- ✓ Energy Conversion and Management
- ✓ Journal of Engineering Science & Technology

B- Books and Books chapters

1. M. A. N Haddad, H. Semmari, K. Imessad et al, 2023, Impact of Using Phase Change Materials with Different Wall Orientations in a Classroom Building Under a Warm Temperate Climate. Sustainability in Energy and Buildings, Singapore: Springer Nature Singapore p. 140-151. Smart Innovation, Systems and Technologies, vol 336. Springer, Singapore. ISBN 978-981-19-8768-7

2. Amara M, Semmari S, Filali F, 2019, Towards CHP system: Preliminary investigation and integration of an ORC cycle on a simple gas boiler, 1st Edition Solutions for Sustainable Development ISBN 9780367824037, CRC Press, London UK.

3. H. Semmari et al, Production d'électricité par procédé thermo-hydraulique. PAF Edition, ISBN-13 : 978-3841620460.

C- Invited Speaker

- **Webinar: Valorisation of geothermal resource for electricity production - Case study for the Chellala thermal resort.** 28th May 2022.
- **Geothermal electricity production.** Workshop 'La géothermie, un substitut du gaz naturel', 4th June 2021, MTEER- Algiers.
- **The utilization of ORC systems as energy efficiency measure for the industrial sector.** First edition of the National Trade Fair for Innovation in Vocational Education and Training 'La formation professionnelle est source de créativité, et d'innovation', 17-18 Mai 2021, CIC- Algiers.
- **Invited speaker:** Pluridisciplinary PhD Meeting (IPPM'20), 23-26 February 2020, organized by EHL University-El-Oued (Algeria).

D- Membership of Scientific Societies

2022 → Management committee observer as researcher for NEAR NEIGHBOUR COUNTRIES – NNC) for the project CA18219 Geothermal Decarbonized Heating and Cooling grids- DHC.

2021 → **Scientific committee** : 6th International Conference on Polygeneration [Link Access](#)

2021 → **Scientific committee:** Workshop on Production and Energy Recovery of Biofuels (WPVEB'21), November 2021, El-Oued university, Algeria,

2020 → **Scientific committee:** International Pluridisciplinary PhD Meeting (IPPM'20), 23-26 February 2020, organized by EHL University-El-Oued (Algeria).

2019 → **Cross-sectoral committee on Energy Management- Algeria,**

2019 → **National technical committee IANOR:** CTN 61: Refrigeration and air conditioning

2018 → **Scientific committee:** Scientific Days on Science and Engineering, December 2018, Constantine.

2018 → **Knowledge Center on Organic Rankine Cycle technology- KCORC,**[Access Link](#)

List of Current Research Projects

1- National Research Project- PNR- 2023-2026: Flare gas valorisation for electricity production- ORC- II.

- >**Scope:** Algerian team leader – technico-economic studies for electricity production using ORC systems.

- >**Partners:** Région In Amenas & DCRD SONATRACH, R20-MED.

2- UNESCO-IGCP 636 project 2020-2025: Geothermal resources for energy transition

-> **Scope:** Algerian team leader - Characterisation and valorisation of the geothermal resource for heating, cooling and electricity production. [ICGP Project Access Link](#) ; [IGCP second link](#)

- >**International consortium:** Algeria, Colombia, Canada, France, Belgium, Argentina, Chile, Japan, China, New Zealand, Italy, Iceland, Sweden, El Salvador, Mexico.

3- Industrial project 2021-2022- Algeria: Valorisation of flare gas for electricity production through ORC systems

-> **Scope: Project leader-** Valorisation of flare gas waste heat for electricity production by implementing ORC energy systems.

- **Partners:** ENPC, Refining & petrochemicals -RPC –SONATRACH, R20-MED.

List of Journal Publications

1. M. A. N. Haddad, H. Semmari, M. C. Lekhal, K. Imessad, M. Amara & L. Derradji, 2022, Optimization of building energy performance through passive design measures in the Mediterranean climate, *International Journal of Ambient Energy*, p. 1-22
2. Filali A, Khezzar L, Semmari H, Matar O, 2021, Application of artificial neural network for mixed convection in a square lid-driven cavity with double vertical or horizontal oriented rectangular blocks, *International Communications in Heat and Mass Transfer*, 129, 105644.
3. Semmari H, Filali A, Aberkane S, Feidt R, Feidt M, 2020, Flare Gas Waste Heat Recovery: Assessment of Organic Rankine Cycle for Electricity Production and Possible Coupling with Absorption Chiller, *Energies*, 13(9), 2265.
4. Feidt M, Semmari H, 2020, Première approche d'optimisation d'un système solaire à Cycle Organique de Rankine, *Entropie: Thermodynamique – énergie – environnement – économie*, Vol 1(1).
5. Semmari H, Stitou D, Mauran S, 2017, Experimental validation of an analytical model of hydraulic motor operating under variable electrical loads and pressure heads, *Applied energy*, <http://dx.doi.org/10.1016/j.apenergy.2017.10.010>
6. Semmari H, LeDen A, Boudéhenn F et al, 2017, Case study for experimental validation of a new presizing tool for solar heating, cooling and domestic hot water closed systems. *Case Studies in Thermal Engineering*, 10, pp. 272-282.
7. Semmari H, Stitou D, Mauran S, 2016, Implementation and experimental results of the new thermo-hydraulique CAPIII pilot, *International Journal of Electrical Energy*, 1, Vol 4.
8. Semmari H, Marc O, Praene J.P. et al, 2014, Sensitivity analysis of the new sizing tool "PISTACHE" for solar heating, cooling and domestic hot water systems, *Energy Procedia*, 48, pp. 997-1006.
9. Semmari H, Stitou D, Mauran S, 2012, A novel Carnot-based cycle for ocean thermal energy conversion, *Energy*, 43, pp.361-375.
10. Mauran S, Martins M, Stitou S, Semmari H, 2012, A novel process for engines or heat pumps based on thermal-Hydraulic Conversion, *Applied Thermal Engineering*, 37, pp.249-257.

List of Conference Papers

1. M. A. N Haddad, H. Semmari, K. Imessad et al, 2023, Impact of Using Phase Change Materials with Different Wall Orientations in a Classroom Building Under a Warm Temperate Climate. *Sustainability in Energy and Buildings*, Singapore: Springer Nature Singapore p. 140-151. https://doi.org/10.1007/978-981-19-8769-4_14

2. Boukail I, Fenchouch L, Kharoua N, Semmari H, 2022, Effects of the soil properties on Canadian wells performance: numerical simulation, ICHMT digital library online (2022). Begel House Inc. DOI: 10.1615/ICHMT.2022.CONV22.240.
3. Aberkane S, Semmari H, Filali A, et al, 2021, Assessment of waste heat potential of an Algerian gas turbine power plant for electricity production and district heating, Proceedings of the 6th International Conference on Polygeneration, ISBN: 978-84-09-35919-6.
4. Kharoua N, Semmari H, Korichi H, Haroun M, Khezzar L, 2021, Numerical simulation of a Canadian well with several circumferential rows of internal vortex generators, Proceedings of the ASME 2021 Fluids Engineering Division Summer Meeting FEDSM2021, Virtual.
5. Filali A, Khezzar L, Semmari H, 2020, Improved Power for Wind Farm Savonius Rotors: Effect of Blade Shape and Rotors Position, Fluids Engineering Division Summer Meeting 83716, V001T01A032, ASME, USA.
6. Filali A, Khezzar L, Semmari H, 2020, Artificial Neural Network for the prediction of heat transfer of mixed convection in lid-driven cavity with double vertical or horizontal blocks. Bulletin of the American Physical Society, USA.
7. Dahmani M, Khaldi F, Stitou D, Semmari H, 2020, Dynamic Simulation of a PV driven hydraulic based vapour-compression heat pump, IIR International Conference Rankine 2020 - Advances in Cooling, Heating and Power Generation, 27th- 31st July 2020. ISBN: 978-2-36215-038-8.
8. Filali A, Matar O, Semmari H, Boumaaraf A, Zitouni K, Khezzar L, 2019, Enhanced Power for a New Design of Savonius Rotors. 72nd Annual Meeting of the APS Division of Fluid Dynamics, Vol 64, Number 13, Saturday–Tuesday, November 23–26, Seattle, Washington, USA.
9. Feidt M, Semmari H, 2019, Première approche d'optimisation d'un système solaire à Cycle Organique de Rankine, International Congress on Energetic and Environmental Systems (IEES-2019), 1-3 November, Hammamet, Tunisia.
10. Filali A, Khezzar L, Matar O, Semmari H, 2019, Laminar mixed convection in square cavity with rotating cylinder mounted at different side walls, 5th International Conference on energy, Materials, Applied energetic and Pollution (ICEMAEP), October 22-24, Constantine, Algeria.
11. Haddad M. A. N, Semmari H, Imessad K. et al, 2019, Une étude de cas sur l'influence de l'isolation thermique sur la charge de chauffage et de refroidissement d'un bâtiment, 5th International Conference on energy, Materials, Applied energetic and Pollution (ICEMAEP), October 22-24 Constantine, Algeria.
12. Amara M, Semmari H, Filali A, 2019, Towards CHP system: Preliminary investigation and integration of an ORC cycle on a simple gas boiler, 1st International Conference on Engineering Solutions for Sustainable Development, ICES2D, 3-4 October, Miskolc, Hungary.
13. Semmari H, Filali A, 2019, Valorisation des gaz torchés pour la production d'électricité, 6^{ème} Symposium de l'Association Algérienne des Industries du Gaz –AIG-, June 23-24 Oran, Algeria.

14. Semmari H, Damous Y, Saidi S, 2018, Dimensionnement d'un système solaire thermique sur la base de la réglementation thermique algérienne, 1st Scientific days on Sciences and engineering- JSSE-, December 09-10, Constantine, Algeria.
15. Semmari H, Khoudja A, 2018, Thermodynamic study of an R134a ORC cycle activated by geothermal source, 4th International Conference on energy, Materials, Applied energetic and Pollution (ICEMAEP), April 29-30 Constantine, Algeria.
16. Semmari H, Stitou D, Mauran S, 2015, Implementation and experimental results of the new thermo-hydraulique CAPILI pilot, International conference on Power and energy systems (ICPES), November 23-25, Lisbon, Portugal.
17. Semmari H, Marc O, Praene J.P. et al, 2013, Sensitivity analysis of the new sizing tool "PISTACHE" for solar heating, cooling and domestic hot water systems, SHC 2013, September 23-25, Freiburg, Germany.
18. Semmari H, Mauran S, Stitou D, 2011, A novel Carnot-based heat engine for OTEC application, CET-IEEE, The World Congress on Engineering and Technology, 28.Oct-2.Nov, Shanghai, Chine.

List of Current Doctoral Research Students Supervision

1. Mohamed Amin Nassim HADDAD