

Curriculum Vitae



Dr. Rami Harkouss

Associate Professor

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Education

- Ph.D., Process Chemical Engineering from INRA-UBP, France, 2014
- M.Sc., Chemical Engineering from ENSCCF, France, 2010
- B.E., Petroleum Drilling Engineering - (minor Production) from PUT, Iran, 2008

Work Experience

1. **Beirut Arab University, Lebanon**, 2015 – present
Chemical and Petroleum Eng. Dept.
2. **Texas A&M University, USA**, 2023 – 2024
Advanced Research and Development in Unconventional Oil and Gas reservoirs
3. **Lebanese University (Faculty of Engineering – Hadath)**, 2015
4. **USEK (Université Saint-Esprit Kaslik)**, 2015
5. **LIU (Lebanese International University)**, 2015
6. **ENSIC (Ecole Nationale Supérieure d'Industries Chimiques), France**, 2014

Expertise

Expert academic and industrial leader with a robust background in Petroleum and Process Chemical Engineering, combining R&D experience in global industrial sectors with years of experience in department headship, governmental standardization committees, and international project management.

Industrial skills and R&D

1. Petroleum – Petrochemical Engineering
 - *National Iranian Oil Drilling Company (Ahwaz and Abadan, Iran)*
 - *Bridging collaboration with ZADCO company, UAE*
2. Process Chemical Engineering (Industrial)
 - *Laboratoire Réactions et Génie des Procédés (Nancy, France)*
 - *Institut National de la Recherche Agronomique (Theix, France)*
 - *LRGB (Clermont-Ferrand, France)*
 - *Sanofi-Aventis (Aramon, France)*

Management and Responsibilities

- Head of the Chemical and Petroleum Engineering Department at BAU, 2017-2023.
- Head of the committee in the Lebanese governmental organization LIBNOR for Oil and Gas engineering field: (NL TC #67 Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries), 2017-2022.
- Manager project assistant of BAU in GOPELC ERASMUS Plus project (Gas and Oil Processing, European Lebanese Cooperation), 2016-2020.
- Faculty Advisor for Society of Petroleum Engineers and AIChE BAU Chapters
- Editorial Board Member in “The Way Ahead” International Petroleum Magazine, 2019-2024.
- Editorial Board Member in Trends in Petroleum Engineering scientific journal, 2020-2025.

Consultancies

- Lebanese Army: Provided strategic consultancy and delivered a technical presentation to the Lebanese Army leader office regarding the petroleum industry and the maritime border dispute.
- Ijazi Group: delivering the technical framework for a pioneering facility dedicated to the recycling and property enhancement of **used lubricating oils**
- Providing strategic consultancy for a **large-scale refinery** in Oman involving partners from Saudi Arabia, Kuwait, and Lebanon
- Deep collaboration with many international and national Oil and Gas companies and organizations, such as Lebanese Petroleum Administration, LOGI, Schlumberger, TotalEnergies, OPA, KAPPA engineering and others.

Honors and Awards

- **2026 SPE MENA PetroBowl Regional Championship**
3rd place for SPE-BAU out of 29 universities teams
- **2023 Fulbright Visiting Scholarship** from **USA Embassy**
4 persons were nominated from Lebanon and around 80 worldwide.
- **2023 Outstanding Lead Content Creator Award**
THEWAYAHEAD magazine of SPE International
- **2019 and 2022 SPE Student Chapter Excellence Award**
- **ADIPEC2017 university program in Abu Dhabi:** “Digitalization in Oil and Gas Industry-The Dawn of a New Era”. (**1st place** out of 16 projects)
- **Engineering Projects Day 2015** at BAU: “Environmental Impacts of Upstream Petroleum Industry” (**1st place** out of 48 projects).

Service activities

- Member of the Lebanese Order of Engineers and Architects
- Member in the Lebanese Military Academy Committee and in the Lebanese Ministry of Education and Higher Education Committee for Oil and Gas sectors

- Member of Society of Petroleum Engineers and American Institute for Chemical Engineers

Research

Journal Publications

1. Munthe, F.A., Lee, W.J. & **Harkouss, R. (2026)**. Smoothing Techniques Improve Trend Detection in Rate-Transient Analysis (RTA) of Tight Gas Reservoirs. *Arab J Sci Eng* (2026). <https://doi.org/10.1007/s13369-026-11553-y>
2. **Harkouss, R.**, Lee, J. & Doughan, Z. (2026). Integrated Advanced Scaling Method with Hybrid Deep Belief Net for Forecasting Flow Regime Transition in Unconventional Oil Reservoirs. *Arab J Sci Eng.*, 2026. <https://doi.org/10.1007/s13369-026-11331-w>
3. Doukeh, R.; Ghet, iu, I.V.; Chis, , T.V.; Stoica, D.B.; Brănoiu, G.; Ramadan, I.N.; Gavrilă, S.A.; Petrescu, M.G.; **Harkouss, R. (2025)**. Hydrogen–Rock Interactions in Carbonate and Siliceous Reservoirs: A Petrophysical Perspective. *Appl. Sci.* 2025, 15, 7957. <https://doi.org/10.3390/app15147957>
4. **Harkouss, R.**, Habli, S. & Dimassi, A. (2025). Carbon Criminal: A Literature Review Chasing the Smooth Break of Renewable Energy into the Power Spectrum. *Arab J Sci Eng.* <https://doi.org/10.1007/s13369-024-09920-8>
5. **Harkouss, R.**, Jha, H. & Lee, J. (2024). Improved Flow Regime Identification and Novel Scaling Approach to Construct Type Wells for Multiply-Fractured Horizontal Wells. *Arab J Sci Eng* (2024). <https://doi.org/10.1007/s13369-024-09315-9>
6. **Harkouss, R.**, Jaafar, A., Ghannam, Z. (2024). Membrane-Based Technologies: A Comprehensive Review for Efficient and Environmentally Friendly Treatment of Produced Water in Oil and Gas Industries, *J.sustain. dev. energy water environ. syst.*, 12(4), 1120527, 2024, DOI: <https://doi.org/10.13044/j.sdewes.d12.0527>
7. **Harkouss, R.**, Jha, H., & Lee, W. J. (2024). Optimizing Type Well Construction: A New Approach for Scaling in Multiply Fractured Horizontal Wells. *The Eurasia Proceedings of Science Technology Engineering and Mathematics*, 29, 81-91.
8. **Harkouss, Rami. (2022)**. Pipeline Modelling for the Lebanese Offshore: Cases in the Oil and Gas Industry. *JORDANIAN JOURNAL OF ENGINEERING AND CHEMICAL INDUSTRIES (JJEI)*. 5. 59-70. 10.48103/jjeci582022.
9. **Harkouss, Rami (2021)** "OVERVIEW ON THE LEBANESE ENVIRONMENTAL GOVERNANCE SYSTEM: MAIN HAZARDS IN THE OIL AND GAZ SECTOR," *BAU Journal - Science and Technology*: Vol. 3: Iss. 1, Article 5.
10. Farsakouri R. and **R. Harkouss** "Influence of Temperature on CO₂ and H₂S Corrosion Rates of Steel Pipelines Using Alloy-Select Software in the Lebanese Oil & Gas Offshore Environment" *Jordanian Journal of Engineering and Chemical Industries*, Vol. 4, No.2, pp:44-51 (2021).
11. **Harkouss, Rami (2020)**. Essential control to environmental regulations for oil and gas industry: spotlight on drilling processes in Lebanon. *BAU Journal-Science and Technology*: Vol. 2: Iss. 1
12. Abou Alfa, Khaled; **Harkouss, Rami**; and Khatib, Jamal (2019). Siderite as a weighting material in drilling mud. *BAU Journal - Science and Technology*: Vol. 1: Iss. 1, Art. 1
13. **Harkouss, R. et al., (2018)**. Development of a multi-physical finite element-based model that predicts water and salt transfers, proteolysis and water activity during the salting and post-salting stages. *Journal of Food Engineering*, 218, 69-79

14. **Harkouss, R. et al.**, (2015). Quantitative study of the relationships among proteolysis, lipid oxidation, structure and texture throughout the dry-cured ham process. *Food Chemistry*, 166, 522-530
15. **Harkouss, R. et al.**, (2014). Building phenomenological models that relate proteolysis in pork muscles to temperature, water and salt content. *Food Chemistry*, 151, 7-14
16. **Harkouss, R. et al.**, (2014). Development of a "Numerical ham" model that couples water and salt transfers to proteolysis during the dry-cured ham process.
17. **Harkouss, R. et al.**, (2012). Development of a rapid, specific, and efficient procedure for the determination of proteolytic activity in dry-cured ham: Definition of a new proteolysis index. *Meat Science*, 92, 84–88

Conference Proceedings

1. **Rami Harkouss and John Lee (2024)**. Identifying Flow Regimes Improves Arps Decline Curve Analysis, 4th International Symposium of Scientific Research and Innovative Studies, ISSRIS'24 proceeding, p: 422-437, 13-16 March 2024, Bandirma, Turkey. ISBN: 978-625-94317-1-0.
2. **Harkouss, R., El-Akoum, H. (2024)**. Zahrani Oil Installations: A study towards the enhancement of the refining process in Lebanon. First Conference of Oil and Gas in Arab Countries, Baghdad, Iraq. 27-28 January 2024. **(Oral presentation)**
3. **Harkouss, Rami** (2021). Risks in Oil and Gas Industry: Walkthrough Environmental Governance System in Lebanon. *Proceedings of the First Jordanian International Chemical Process Safety Virtual Conference (JCPSC2021), Amman, Jordan. March 30-31, 2021. (8 pages + oral)*
4. **Harkouss et al.**, (2015). Primary guidance to environmental legislations for upstream petroleum industry: focus on drilling operations. *Proceedings of the Mediterranean Gas and Oil International Conference 2015 (MedGO'15)*, Beirut, Lebanon, pp. 21-24. April 16-18, 2015. **(4 pages + oral)**
5. Bou Hamdan, k., **Harkouss, R.**, Abou Chakra, H. (2015). An overview of extended reach drilling: focus on design considerations and drag analysis. *Proceedings of the Mediterranean Gas and Oil International Conference 2015 (MedGO'15)*, Beirut, Lebanon. April 16-18, 2015. **(4 pages + oral)**
6. **Harkouss et al.**, (2012). A new method and index for quantifying proteolysis intensity in dry-cured ham. In *58th International Congress of Meat Science and Technology*, Montreal, Canada, 12-17 August 2012 **(4 pages + oral)**.
7. **Harkouss et al.**, (2012). Evolution of proteolysis in pork muscles as a function of temperature and water and sodium chloride contents. In *14èmes Journées des Sciences du Muscle et Technologies des Viandes*, Caen, France, novembre 2012 **(2 pages + oral)**.
8. **Harkouss et al.**, (2012). Effect of temperature, salt and water content on the proteolysis activity in small laboratory pork meat samples. In *2012 European Federation of Food Science and Technology (EFFoST) Annual Meeting*, Montpellier, France, 20-23 November 2012 **(2 pages + oral)**.
9. **Harkouss et al.**, (2013). Towards building of a “numerical ham” for simulating proteolysis and salt and water transfers during the dry-cured ham elaboration process. In *59th International Congress of Meat Science and Technology*, Izmir, Turkey, 18-24 August 2013 **(4 pages + oral)**.
10. **Harkouss et al.**, (2013). Phenomenological models relating proteolytic evolution of small pork meat samples to temperature and water and salt contents. In *59th International*

Congress of Meat Science and Technology, Izmir, Turkey, 18-24 August 2013 (**4 pages + poster**).

11. **Harkouss et al.**, (2013). Time-course evolution of protein degradation velocity in pork meat samples: integration in a model simulating dry-cured ham manufacture. In *14ème Congrès de la Société Française de Génie des Procédés*, Lyon, France, 8-10 octobre 2013 (**8 pages + oral**).

Peer-review

1. « An Analytical-Numerical Study on the Integration of Partial Oil Reinjection and Downhole Water Sink Technologies for Water Coning Mitigation in Oil Wells», *Arabian Journal for Science and Engineering* (2026).
2. «Development of a ZnO-Co₃O₄/SiO₂ Hybrid Membrane: A Robust Solution for Oil-in-Water Separation in Harsh Acidic and High-Salinity Oilfield Water», *Emergent Materials* (2026).
3. « Oil and Gas in Lebanon: History, Prospects and Implementation Challenges », *Architecture & Planning Journal*, Beirut Arab University (2019)
4. « Analysis of Complex Deep-well's Drill-string Stick-slip Vibration and Its Soft-torque Control», *Second International Conference on Mechanical, Electric and Industrial Engineering*, China MIE2019, May 25-27, 2019.

Oil Industry Simulation: DrillSim20, Saphir, AspenHysys

Languages Proficiencies: English, French, Arabic, Persian

Interviews and Media

1. Lebanese TV: interviews on direct at MTV, OTV and Future televisions
2. International and National Journals: Al-Ahram (Egypt), Al-Iktissad wal-Aamal, L'Orient-le-Jour