

Personal Information

- Name: Kaveh Moulaei
- Gender: Male
- Email: kmoulaei@unime.it - [REDACTED]

Abstract

Over the course of my studies, I have been working on design and fabrication sensors by incorporating nanostructures and/or organic modifiers to improve their efficiency. By resolving the obstacles, we can make sensors more useful, and push them beyond being merely laboratory models into field-ready devices. My interest was in the detection of analytes both in the gas phase (gas sensors) and in the solution phase. Moreover, I have applied my knowledge of (photo)electrochemistry to the development of electrocatalysts for water splitting and hydrogen production as the most demanding candidates to replace fossil fuels.

Research Interests

- **Electrochemistry** for biomolecules and biomarkers detection
- **Chemoresistive Gas Sensors** for industrial and breath analysis applications
- **Nanostructure Synthesis** by chemical and electrochemical techniques
- **Green energy/ hydrogen production** through development of new electrocatalysts for (photo)electrochemical water splitting

Education



University of Messina, *Messina, Italy*

Borsa di studio, (2022- 2023)



University of Messina, *Messina, Italy*

- PhD. (Material chemistry and engineering) (2018- 2021)
- **Europeans Doctorate** with grade: **Excellent**
Supervisor: Prof. Giovanni Neri



University of Tehran, Tehran, Iran

Scientific collaboration in the field of electrochemical sensors (2014-2016)

(Developing nanostructure based electrochemical sensors)



University of Chamran, Ahvaz, Iran

- M.S., Analytical Chemistry (2009-2011)
- Supervisors: Prof. Hooshang Parham and Prof. Behrooz Zargar



University of Isfahan, Isfahan, Iran

- B.S., Pure Chemistry (2004-2009)

Rewards and Achievements



Scholarship for a 3-month sabbatical leave as a visiting researcher in Belgium. (University of Antwerp), **Belgium (2021)**

Universiteit
Antwerpen

Subject: *Application of modified photosensitizers for phenolic compounds and singlet oxygen detection.*



Scholarship for a 6-month sabbatical leave as a visiting researcher in Canada (The university of British Columbia), **Canada (2021)**

Subject: *Cannabinoids Sensing in Marijuana/Hemp.*



Fully funded PhD position at university of Messina (UNIME), **Italy (2018)**, *bando nazionale di concorso 34th cycle (34th Italian nationwide exam)*

Subject: *INGEGNERIA E CHIMICA DEI MATERIALI E DELLE COSTRUZIONI (Engineering and chemistry of materials and constructions)*



Scholarship for a 10-month sabbatical leave as a visiting researcher in Italy (Professor Giovanni Neri's Laboratory), **Italy (2017)**

Subject: *Gas sensors*

Presentations (in person)

Rome, Italy (2022)

Speaker, Nanoinnovation (7th forum), 2022, Rome, **Italy**

Milazzo, Italy (2022)

Speaker, IEEE international workshop on metrosea, 2022, Milazzo, **Italy**

Perugia, Italy (2022)

- Speaker, CIMTEC 9th Forum on New Materials, 2022, Perugia, **Italy**

Montreal, Canada (2019)

- Speaker, IEEE sensors, Palais des congres de montreal, 2019, montreal, **Canada**

Lipari, Italy (2019)

- Speaker, Associazione Italiana di chimica per ingegneria (AICING), 2019, Lipari, **Italy**

Napoli, Italy (2019)

- Speaker, Associazione Italiana Sensori e Microsistemi (AISEM), 2019, Napoli, **Italy**

Catania, Italy (2018)

- Speaker, Convegno Nazionale Sensori (CNS), 2018, Catania, **Italy**