

## PERSONAL INFORMATION

Molea Andreia



## JOB APPLICATION

### Associate Professor

Technical University of Cluj-Napoca, Faculty of Automotive, Mechatronics and Mechanical Engineering, The Department of Automotive Engineering and Transports

## PROFESSIONAL EXPERIENCE

25.02.2019 – present

### Lecturer

Technical University of Cluj-Napoca, Faculty of Automotive, Mechatronics and Mechanical Engineering, The Department of Automotive Engineering and Transports

#### Po. SL26, Courses/laboratories:

- Fuels, lubricants and special materials for vehicles
- Production, testing and use of biofuels
- Fuels, lubricants and maintenance materials for vehicles
- Testing and homologation of vehicles
- Systems theory and automation

Activity type: Teaching

30.09.2016 – 25.02.2019

### Assistant Professor

Technical University of Cluj-Napoca, Faculty of Automotive, Mechatronics and Mechanical Engineering, The Department of Automotive Engineering and Transports, 103-105 Muncii Avenue, Postcode 400641, Cluj-Napoca

#### Laboratories:

- Systems theory and automation
- Fuels and lubricants
- Fuels, lubricants and special materials

Activity type: Teaching

01.11.2016 - 30.09.2018

### Research Assistant

Technical University of Cluj-Napoca, Faculty of Materials and Environmental Engineering, Department of Physics and Chemistry, Research Laboratory for Composite Materials and Environmental Chemistry, 103-105 Muncii Avenue, Postcode 400641, Cluj-Napoca

- **Project PN-III-P2-2.1-BG-2016-0204** – “Optimization of the amino acid chelates synthesis process in order to obtain materials with new applications.”

Activities: Obtaining gelatin-based films containing protein hydrolysates, cross-linked with metals to obtain metal chelates. The stability of the foils in the aqueous medium was highlighted by absorption studies, and the characterization was carried out using FT-IR spectroscopy.

Activity type: Research

15.10.2012 – 30.12.2016

### Research Assistant

Technical University of Cluj-Napoca, Faculty of Materials and Environmental Engineering, Department of Physics and Chemistry, Research Laboratory for Composite Materials and Environmental Chemistry, 103-105 Muncii Avenue, Postcode 400641, Cluj-Napoca

- **Project 165/2012-PN-II-PT-PCCA-2011-3.2-1275** – “New generations of biomaterials for dental cosmetics – COSMETICDENT”

Activities: Obtaining new materials used in dentistry. Characterization and evaluation of endodontic materials using FT-IR and UV-Vis spectroscopy.

Activity type: Research



01.10.2015 – 30.09.2016

### Research Assistant

Technical University of Cluj-Napoca Faculty of Machine Building, Micro Nano Systems Laboratory, Nr. 103-105 Muncii Avenue, Postcode 400641, Cluj-Napoca

▪ **Project C.I.5/1.2/2015** - „Development and tribomechanical, structural and optical characterization of nitride thin films for MEMS applications – NiriMEMS”

Activities: Optical characterization of nitride-based films by UV-Vis spectrometry; Calculation of optical parameters: bandgap energy, absorption coefficient, extinction coefficient, real and imaginary dielectric constant, refractive index; Correlation of optical properties with structural properties and synthesis conditions.

Activity type: Research

## EDUCATION AND TRAINING

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02.10.2017 – 21.07.2019

### Master studies

Technical University of Cluj-Napoca, Faculty of Automotive, Mechatronics and Mechanical Engineering, Specialization: Automobile and Environment.

Master's diploma

01.02.2017 – 30.09.2017

### Mentoring program: Development of the university teaching career – foCUS

Mentor: Prof. Dr. Eng. BURNETE Nicolae

Activities/Indicators: Attendance at course and laboratory sessions; Creating teaching materials for 2 course sessions; Creating teaching materials for 2 laboratory sessions; The design of 8 hours of individual study for students; Elaboration of the development plan of the university career for the next 5 years.

01.05.2014 - 15.11.2015

### Postdoctoral research program

Technical University of Cluj-Napoca, Faculty of Materials and Environmental Engineering, Department of Physics and Chemistry,

Project „Inter-University Partnership for Engineering Excellence - PARTING”, POSDRU/159/1.5/S/137516

Activities: Sensitization of semiconductor materials based on titanium dioxide with natural dyes to have photocatalytic performances in the visible range, with the aim of being used in the wastewater treatment containing organic substances, under the action of visible/solar radiation.

01.10.2009- 01.10.2012

### Doctoral studies

Technical University of Cluj-Napoca

Doctor from 2012, in the field of Engineering Sciences, subfield Materials Engineering

Doctoral thesis title: „Nanostructured materials with photocatalytic activity / Materiale nanostructurate cu proprietăți fotocatalitice”, Supervisor: Prof. Dr. Eng. Popescu Violeta.

2004-2009

### Bachelor's degree studies

Technical University of Cluj-Napoca, Faculty of Materials and Environmental Engineering, Specialization: Engineering and environmental protection in industry

Engineer's diploma

1998-2002

### High school studies

High School of Industrial Chemistry „Liviu Rebreanu” – Turda

Baccalaureate diploma

Certificate - Physico-chemical analysis laboratory technician

## COURSES/INTERNSHIP OF SPECIALIZATION

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12.04.2021 – 06.10.2021

### Embedded Systems - Certificate ID 100122

TEN Academy – Module 1. Introduction to ANSI C programming language, Module 2. Embedded systems, communication protocols, memory types, Module 3. Introduction to AUTOSAR, system stack, diagnostic stack, memory stack.



01.02.2011 – 01.10.2011

**University of Birmingham, School of Chemical Engineering,  
UK**

Mobility internship within doctoral studies; Supervisor: Prof. Dr. Neil A Rowson.

**PERSONAL SKILLS**

Native language  
Other known foreign languages

Romanian

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Participating in the conversation	Oral speech	
B1	B1	B1	B1	B1
Certificate of language competence No. 02634/22.07.2016				

Levels: A1/2: Basic User - B1/2: Independent user - C1/2:

Communication skills

Good communication skills acquired through presentations at national and international conferences/congresses and teaching activity.

Organizational/managerial skills

Coordinator/Scientific Consultant Diploma and Dissertation projects, organizing team member of the AMMA 2018 Congress, SIAR general meeting member and secretary of the SIAR Cluj, ASART member and member ARoTMM.

Skills acquired at workplace

Determination of the physicochemical properties of some fuel mixtures and their evaluation so that they can be used as alternative fuels in internal combustion engines; Increasing the miscibility between diesel and ethanol through additives; Improving the lubricating properties of lubricating oils through nano-additives; Obtaining some oxidic materials with active properties, by chemical methods; Material characterization from a structural and optical point of view; FT-IR, UV-Vis and XRD spectrometer operation.

Computer skills

Operation of technical software: Origin Pro8, UV-WinLab, IR software, Inca Software, Match!, Powder Cell, Matlab/Simulink

Other skills

Equipment use and operation: Anton Paar SVM 3000 viscometer, Pensky Martens HFP 339 automatic flash point tester, Bruker D8 series X-ray diffractometer, Bruker S8 Tiger X-ray fluorescence spectrometer, WITec Alpha 300R confocal Raman microscope, electron microscope scanning device Jeol 6060 and the INCA OXFORD dispersive energy spectrometer.

Reviewer: CAR Congress 2017, AMMA Congress 2018, Lubricants, Industrial & Engineering Chemistry Research - ACS Publication, Powder Technology, Optoelectronics and Advanced Materials – Rapid Communications.

**ADDITIONAL INFORMATIONS**

Publications

1 PhD thesis in Material Engineering; 3 Didactic books ( 2 as first author); 20 ISI/ISI Proceeding Scientific papers: according to Web of Science (12 ISI indexed and 8 ISI Proceeding indexed);

Conferences

9 presentation/participation of international and national conferences/congress

Projects

3 as member and 1 postdoctoral scholarship

Awards

4 Articles awarding of through the UEFISCDI program.

Citations

162 according to ISI Web of Science

09.01.2024

