

PERSONAL INFORMATION

AHMADREZA ALAEDDINI

CURRENT POSITION

PhD student in Information and Communication Technologies (ICT) in the Department of Information Engineering, Electronics and Telecommunication, Sapienza University of Rome, Italy
 Research area: Non-Linear Photonics, MOEMS, Optoelectronic, Sensing

Current research interest:

- Non-linear all-optical photonics device for frequency conversion in optical communication wavelength range
- Micro-Opto-Electro-Mechanical systems (MOEMS) for sensing and optical communications
- Optoelectronic lab-on-chip sensors for monitoring food and water quality

EDUCATION AND TRAINING

From 11.2023 to present

PhD student in Information and Communication Technologies (ICT)
 Sapienza University of Rome, Rome, Italy

From 09.2020 to 07.2023

MSc in Nanotechnology Engineering
 Sapienza University of Rome, Rome, Italy
 GPA : 110/110 cum laude

From 09.2011 to 09.2013

MA in Art Research
 Payam noor University, Tehran, Iran
 GPA : 3.0 / 4.0

From 09.2006 to 09.2011

BSc in Material Engineering (Ceramics)
 Azad university of Science and Research, Tehran, Iran
 GPA : 3.0 / 4.0

WORK EXPERIENCE

From 09.2013 to Present

Ceramic Workshop Owner & Manager
 Ala Blue Beads Ceramic Workshop

From 02.2016 to 12.2020

Construction Manager and Interior Designer
 Freelance

From 02.2011 to 12.2016

Glaze and Body Formulation Consultant
 Goldane Sefid Ceramic Workshop

PERSONAL SKILLS

Mother tongue(s)

Farsi (Persian)

Other Language(s)

| | UNDERSTANDING | | SPEAKING | | WRITING |
|----------------|---------------|-----------|--------------------|-------------------|-----------|
| | Listening | Reading | Spoken interaction | Spoken Production | |
| English | C1 | C1 | C1 | C1 | C1 |
| Italian | A1 | A1 | A1 | A1 | A1 |

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Computer Skills

- **COMSOL Multiphysics**
- **Matlab**
- **AutoCAD**
- **Origin**
- **KaleidaGraph**
- **KLayout**
- **LaTeX**

Other Skills

- **Micro-Nano Fabrication in clean room environment:**
Thin-film deposition using Plasma Enhanced Chemical Vapor Deposition (PECVD); Physical Vapor Deposition (PVD - Sputtering and Evaporation techniques) for fabricating amorphous silicon photodiode and top and bottom contact of the sensor device. Spin Coating and Photolithography for introducing the different patterns such as SU-8 optical waveguide.
- **Optical Bench:**
Optical set-up arrangement, using free space and pigtailed laser source and perform the coupling with the optical fibers and polymeric ridge waveguides using collimators and prisms.
- **Electronic and Optoelectronic devices measurements and characterization:**
Using probe station for characterization and measurements related to Optoelectronic and MEMS devices
- **Ceramic body and glaze formulation, forming and application:**
Different forming methods of ceramic bodies and different glazing formulation and application methods

Soft Skills

- **Team-Work**
- **Problem Solving**
- **Multi-disciplinary background**
- **Creativity**

ADDITIONAL INFORMATION

Publications

Alaeddini, A., Buzzin, A., Asquini, R., Caputo, D., de Cesare, G. (2024). **Sub-ppm Photonic Sensor for Water Quality Control: Feasibility Study on Zinc and Lead Detection** XXII National Conference of Sensors and Microsystems (AISEM2024). Accepted for publication.

Alaeddini, A., Buzzin, A., Asquini, R., Caputo, D., & de Cesare, G. (2024, May). Sub-ppm Evanescent Waveguide Sensor for Heavy Metal Detection in Water. In 2024 47th MIPRO ICT and Electronics Convention (MIPRO) (pp. 1716-1720). IEEE.

Buzzin, A., Alaeddini, A., Asquini, R., Quaranta, S., Caputo, D., de Cesare, G. (2023). **Evanescent Waveguide Sensor for the Detection of Chromium Concentration in Water: Performance Evaluation**. In 2023 Frontiers in Optics+Laser Science Conference (Fio+LS).

Alaeddini, A., Moghbeli, A. (2013) **Native Technology of Khar-mohreh (special ceramic beads) Production and The Similar Non-Native Technologies**
Art Research Scientific Journal, 2013, Winter-Edition

Research & Projects

Development of an Optoelectronic Integrated System for Detection of Contaminants in Water
Master Thesis, 2023

Study the flow behaviour in a Lid-Driven Cavity from the Atomistic point of view.

Using the LAMMPS environment, the flow behaviour of an incompressible Newtonian fluid in lid-driven cavity with different Reynolds number was studied. the results visualized and plotted using VMD and gnuplot, respectively. Laboratory of Micro-Nano Fluidics course – 05, 2023

Study of formulation and production of khar-mohre (special ceramic beads)

Khar-mohre is a special self-glazing ceramic body which is formed with almost 100% of Silica (the paste is made by organic glue). The unique glazing method is called Cementation. The sintering is done in traditional kiln around 1,200 degree C. the effect of silica powder mesh size and presence of different transition metals in glazing powder was studied.
Bachelor Thesis, 2011

Conferences & Seminars

Participation in XXII National Conference of Sensors and Microsystems (AISEM2024) – Oral Presentation
Bologna, Italy – 02.2024

Participation in RESTART Plenary Dissemination Workshop – Poster Presentation
Bologna, Italy – 01.2024

Participation in Frontiers in Optics+Laser Science Conference (Fio+LS) – Poster Presentation
Tacoma, Washington, USA – 09.2023

Participation in NanoInnovation2022 – Conference & Exhibition

Sapienza University of Rome, Rome, Italy – 09.2022

Participation in International Summer School Dimensions of Intelligence in Materials

Dresden Center for Intelligent Materials (DCIM), Dresden, Germany – 08.2022

Participation in NANOSUM2022 Summer School (Awarded the CIVIS scholarship) – Erasmus+

AIX-Marseille University, Marseille, France – 06.2022

Participation in school on Micro & Nano Techs organized by the Italian Micro and Nano Fabrication IT-FAB

Sapienza University of Rome, Rome, Italy – 09.2021

Participation in NanoInnovation2021 – Conference & Exhibition

Sapienza University of Rome, Rome, Italy – 09.2021

Participation in Structural Membranes2021 – International Conference on Textile and Inflatable Structures

Online – 09.2021

Participation in International Summer School Material 4.0 – Bridging the Scales

Dresden Center for Computational Materials Science (DCMS), Dresden, Germany – 08.2021

Others

Taking part in International English Language Testing System (IELTS)

Overall band score: 7