## PERSONAL INFORMATION

# Maddalena Patrini

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Sex F Date of birth - | Nationality Italian

## WORK EXPERIENCE

March 2026 - present

### Full Professor in Experimental Physics of Matter
### University of Pavia, Department of Physics 'A. Volta'

- Head of Optical spectroscopies & Scanning Probe Microscopies and Spectroscopies for Materials-S4M Laboratories
- President of MADE – Advanced Materials and Devices - interdisciplinary Research Center of the University of Pavia
- Teaching courses in Laboratory of Physics III, Fundamentals in solid state physics, Spectroscopies of Materials, Applied physics for Cultural & Scientific Heritage for Bachelor and Master degree in Physics
- Member of the PhD in Physics school Board

Business or sector Material science, spectroscopies and devices

November 2014- February. 2026

### Associate Professor in Experimental Physics of Matter
### University of Pavia, Department of Physics

- Head of Optical spectroscopies and Spectroscopies for Materials-S4M Laboratories
- President of MADE – Advanced Materials and Devices - interdisciplinary Research Center of the University of Pavia
- Teaching courses in Electromagnetics, Basics solid state physics and Spectroscopies of Materials for Bachelor and Master degree in Physics
- Member of the PhD in Physics school Board

Business or sector Material science, spectroscopies and devices

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### Associate Professor in Experimental Physics of Matter

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- Member of the PhD in Physics school Board

Business or sector Material science, spectroscopies and devices

January 2001 - October 2014

### Researcher in Experimental Physics

University of Pavia, Department of Physics, School of Pharmacy

- Research activity in optical spectroscopy of materials
- Teaching of courses in General Physics for Pharmacy/Biotechnology degrees and in Photonics for Master degree in Physics

Business or sector Material and spectroscopies, optics, photonics and sensing

## EDUCATION AND TRAINING

March 1998 – February 2000

### Post-Doc contract

Scuola Normale Superiore, Pisa and Saint-Gobain Recherche, Italia

- Metallic nanostructures in amorphous matrices

January 1997 – December 1997

### 2nd level Master in Material Science and Technology

IUSS University School for Advanced Studies

- Material science, optical and photonic devices, growth and characterization technologies

November 1993 – July 1997

### PhD in Physics

University of Pavia

- Study and characterization of epitaxial III-V semiconductor heterostructures

October 1986 – February 1992

### MS degree in Physics

University of Pavia

- Infrared and optical spectroscopies on semiconductor materials

## PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|---|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | B2 | B2 | B1 | B1 | B2 |
| Replace with name of language certificate. Enter level if known. | | | | | |

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

**Communication skills**

- good communication skills gained through my experience as a teacher and researcher, communication style adapted to fit different audience and situations

**Organisational / managerial skills**

- responsibility of a research laboratory: managing relationships with undergraduate, graduate, and PhD students, colleagues and collaborators, promoting research directions and work programs
- leading as promoter or co-promoter financed research projects, managing coordination, research activities and budget
- ability to manage work in committees at different levels.

**Job-related skills**

- Material science research approach aims at the application of inorganic and organic, micro- and nano-structured materials in technologies and devices for photonics, optics, sensors and energy harvesting.
- Most recent research activities focus on the study and characterization of innovative micro- and nano-structured materials, managing the propagation, absorption and emission of electromagnetic radiation both in the broad optical spectrum and at low frequencies.
- From 2005 on, her research interests have focussed on photonic crystal systems, and on plasmonic and photonic nanostructures for applications in optical and sensing devices.
- Experimental techniques of interest for material study and characterization span from linear optical spectroscopies, spectroscopic ellipsometry, ATR FTIR, Raman Scattering and photoluminescence, X-ray fluorescence, electrical characterization, scanning probe microscopies.

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Digital skills
- OS: iOS and Windows
- Office suite (word processor, spread sheet, presentation software)
- Scientific data analysis software (Origin, Spectroscopic tools)

Driving licence B

## ADDITIONAL INFORMATION

Publications
Presentations
Projects
Patents
Conferences
Memberships
References
Citations

- Author and co-author of more than 180 scientific publications in books, journals and peer-reviewed conference proceedings.
- List of publications at the link in Annexes
- 2 patents (Italian and US, see Annexes) in the energy harvesting field with ATOM S.p.A.
- Scientific interaction with PLASMORE s.r.l. spin-off
- Bibliometric parameters: h-index: 37, total citations 4150 (Scopus – Jan2022)
- Member of Italian Physical Society and MRS Materials Research Society
- Member of Organizing and Local committees for workshops and conferences
- Referee for applied physics international journals.

## ANNEXES

Ongoing Projects
- Principal Investigator in Progetto Materiali Avanzati Fondazione Cariplo e Regione Lombardia 2019 – 2022 “Towards smart footwear systems: a self-powered, intelligent shoe (FITNESS)”
- Participant in Call HUB Regione Lombardia 2020- 2022 “Approvvigionamento energetico e gestione della risorsa idrica nell’ottica dell’Economia Circolare”
- Research contract with RSE S.p.A for multijunction solar-cells “Ottimizzazione e caratterizzazione di rivestimenti antiriflesso nanostrutturati” 2019-on
- Research contract with ENI S.p.A. 2021 “Test e valutazione performance sensori in fibra ottica per il monitoraggio perdite di idrocarburi dal fondo di serbatoi”

Previous Projects
- Progetto “Fondo per la promozione degli Accordi Istituzionali” Regione Lombardia 2010-2012 “Dalla scienza dei materiali allo sviluppo di nuovi dispositivi per la diagnosi e la cura di patologie associate all’invecchiamento”
- Contratti di ricerca ENI 2009-11 “Cristalli fotonici per celle fotovoltaiche” e 2012-2014 “Fotonica per sistemi fotovoltaici basati su concentratori fluorescenti”
- Progetto Fondazione Cariplo 2008-11 “Superfici vetrose a azione antimicrobica basata sul rilascio modulato e controllato di cationi metallici”
- Progetto MIUR-PRRIN 2005-2006 “Dispositivi fotonici avanzati per applicazioni biomediche”
- Progetto ”ex-ASTIL” di Regione Lombardia per Cooperazione Scientifica e Tecnologica Internazionale 2010-2012 “Nanostructured photonic devices for innovative biosensing applications”
- UE Network of Excellence “PHOREMOST” 2005-2008 “Nanophotonics to realize molecular scale technologies”.

Publication list https://www.scopus.com/results/results.uri?sort=plf-f&src=s&st1=Patrini+M&st2=Pavia&sid=a923e2694f402529ae85bd312087aa9c&sot=b&sdt=b&sl=41&s=%28AUTHOR-NAME%28Patrini+M%29+AND+AFFIL%28Pavia%29%29&origin=cto&editSaveSearch=&yearFrom=Before+1960&yearTo=Present

Patents Sviluppo di Brevetto Italiano IT201600118202 “Materiale composito con proprietà elettrostrittive per un dispositivo di recupero di energia meccanica”, Piercarlo Mustarelli, Fabio Invernizzi, Maddalena Patrini, Sergio Dulio (22 Novembre 2016).
Sviluppo di Brevetto US Patent No. 010505100B2 “Composite material with electrostrictive properties for a mechanical energy recovery device”, Piercarlo Mustarelli, Fabio Invernizzi, Maddalena Patrini, Sergio Dulio (December 10, 2019).

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According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

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