

Anna PANDOLFI

Professor of Structural Mechanics, Politecnico di Milano, Italy

Visiting Associate in Aerospace, California Institute of Technology, Pasadena CA, USA

Education

- PhD in Mechanics, Laboratoire de Physique et Mecanique des Materiaux, Universite' Paul Verlaine de Metz, France.
- MS in Civil Engineering, Structural Engineering, Politecnico di Milano.

Professional positions

- 2001 – 2016: Associate Professor, Department of Civil and Environmental Engineering (formerly Structural Engineering Department) at the Politecnico di Milano, Industrial Engineering School.
- 1995 - 2001: Assistant Professor, Department of Structural Engineering, Politecnico di Milano, Engineering School.
- 1989 - 1995: Engineering consultant, Alphard Srl (technical and scientific software firm), Milano.
- 1988 – Staff engineer, Rocksoil Spa (geotechnical engineering firm), Milano.

Professional positions held abroad

- 2013—to present: Visiting Associate, Division of Engineering and Applied Sciences, California Institute of Technology, Pasadena, CA, USA.
- 2008 – 2013: Permanent Visiting Associate, Division of Engineering and Applied Sciences, California Institute of Technology, Pasadena, CA, USA
- 2012 - 2013: Visiting Professor at INRS, Universite' de Montpellier II, France (several periods)
- 2008: Chercheur Associe' CNRS, Laboratoire Sols, Solids, Structures, Risques (3S -R) Institut National Polytechnique de Grenoble (3 months).
- 1996 - 2007: Visiting Associate, Division of Engineering and Applied Sciences, California Institute of Technology, Pasadena, CA, USA (several periods of time from 1 month to 2 years).

Teaching

Engineer degree courses:

- 2000-2017: Mechanics of Solids (Energy Engineering)
- 2011-2017: Fundamentals of Structural Mechanics (Aerospace Engineering)
- 2006-2007: Structural mechanics (Management Engineering)

Master of Science courses:

- 2004-2011: Structural and Thermal Analysis (Industrial Engineering)

Doctorate courses:

- 2007, 2010, 2012, 2014-2016: Nonlinear Solid Mechanics, Doctoral School of the Politecnico di Milano.

Member of the PhD School committee in:

- 2012—present: Mathematical Methods and Models for Engineering, Politecnico di Milano
- 2000—2014: Structural Engineering, Seismic and Geotechnical Engineering
- Adviser or coadviser of 10 PhD students between 2000 and 2017, one current student.

Research activity

- Author of 64 publications in peer-reviewed international journals, and of 50 other articles, book chapters and conference proceedings. Current h-index 22, about 2040 ISI citations in total.
- Reviewer in more than 60 scientific journals in the field of mechanics, biomechanics and physics.

Honors and invitations

- Honorary speaker (Plenary, semi-plenary and keynote speaker) in 11 international conferences and workshops.
- Invited seminar lecturer in more than 65 scientific institutions (including Harvard MA, Caltech CA, UCLA CA, UCSD CA, Stanford CA, EPFL Switzerland, Paris VI France, Stuttgart Germany, Dresden Germany, Stockholm Sweden, Glasgow UK, Durham UK, and many others).
- Invited speaker in more than 40 international and national conferences.

Research Topics

1. Space and time discretization methods for coupled problems.
2. Biomechanics of biological tissues, in healthy conditions and suffering from diseases. In particular corneas, arteries, myocardial, and intestine tissue.
3. Mechanical and chemo-mechanical behavior of biocompatible elastomers.
4. Metaconcrete: a new concept for aggregates to enhance the dynamical behavior of concrete.
5. Simulations of the propagation of fracture in thin shells and plates with cohesive approaches.
6. Constitutive models in finite deformations: plasticity (Cam -clay) and multiscale damage models for the degradation of brittle materials.
7. Configurational distortions of nematic liquid crystals in the presence of electric and magnetic fields
8. Rate-sensitivity of fracture propagation in polymer composites.
9. Mechanics of non-smooth contact with and without friction.
10. Self-adaptive procedures for the propagation of the fracture in finite element meshes.
11. Finite deformation cohesive models for fracture mechanics and fatigue in ductile and brittle materials.