Biosketch. MASSIMILIANO FRALDI is full professor of Mechanics of Structures, Nonlinear Mechanics and Biomechanics at the University of Napoli Federico II, Italy, where he is head of the Centre for Structural Composites (SCIC), delegate of the Rector for "Campania Imaging infrastructure for Research in Oncology", responsible of the Laboratory of Integrated Mechanics and Imaging for Testing and Simulation of bio-systems, member of the Task Force on Quantitative and Computational Biology and the Doctoral College of Structural and Geotechnical Engineering and Seismic Risk at the Department of Structures for Engineering and Architecture (DIST). He is also associate to the Interdisciplinary Research Centre on Biomaterials (CRIB), the Interdepartmental Center for Advances in Robotic Surgery (ICAROS), affiliated member of the Institute of Applied Sciences and Intelligent Systems (ISASI) of the National Research Council (CNR) of Italy, fellow of the Italian Association of Theoretical and Applied Mechanics (AIMETA) – within which he is Executive Committee member of the Group of Mechanics of Materials (GMA) – the National Interuniversity Consortium for Material Science and Technology (INSTM), the Society for Natural Philosophy (SNP, founded by Clifford Truesdell) and the "Istituto Nazionale di Alta Matematica" (INdAM).
He is/has been PI, co-proponent and/or Research Unit for several funded research projects, being responsible in the last five years for a personal contribution of about two million euros, also serving as scientific consultant for public research institutes and international R&D departments of leading companies working in the fields of aerospace and mechanical engineering and pipelines, and as technical expert for mechanics of structures for the Court/Judicial Authority as well. In the last five years, he has been invited to University of Oxford for the meeting "Mathematics and Mechanics: Natural Philosophy in the 21st Century", invited speaker for the summer school on Advances in Functional Materials organized by the "Ettore Majorana Foundation", and for the INdAM Meeting on "Active materials: from mechanobiology to smart devices" in Cortona (Italy) and keynote speaker on "Questions, answers and open issues in mechanics of living matter" for the final project of Excellence of the Department of Civil, Environmental and Mechanical Engineering of Trento (Italy), being also invited to give a cycle of seminars at the University of Pisa and Florence for the Doctoral School on "Mechanics of some unconventional systems". He is currently invited speaker for the International Conference on Waves and Stability in Continuous Media (WASCOM) and for the 26th International Congress of Theoretical and Applied Mechanics, Daegu, Korea, in 2024, and co-organizing of the USA-Italy workshop "Biomechanics Outsourcing New Disciplines" (U&I:BOND). He is author of about 120 scientific papers published on indexed recognized international and leading peer-reviewed journals, whose themes cover a broad range of topics, from theory of elasticity and analytical methods in stability, plasticity and dynamics to optimization of composites and mechanics of living systems. At the University of Napoli Federico II, he is a group leader coordinating the research activities of four researchers, tutoring/co-advising several Ph.D students and post-doc scholars.
Short CV. After receiving his Master Degree from the University of Napoli Federico II in the year 1995, with full marks and honors, Massimiliano Fraldi was awarded in the year 1999 the title of Doctor of Philosophy in Structural Engineering from the same University. In 2000 he first obtained a 2-year post-doctoral scholarship by the European Community on Mechanics of Non-Homogeneous Materials, then he applied in 2001 for a National Research Council (CNR) international fellowship on Special Materials and Innovative Technologies, a competition which he won with the maximum score (30/30). Then, he first became Researcher (2004) and Assistant Professor (2007-2013), subsequently gaining the National Scientific Qualifications (2012-2017) and becoming Associate Professor (2014) and Full Professor (2018). In 2009, as PI of the competitive project FIRB (Futuro in Ricerca) on "Cell mechanics as strategy for therapy and diagnosis of solid tumors" (RBFR08XXHJ), he obtained full marks (40/40) and project eligibility for 2010. In the spring of 2012 he served as Lecturer for the South American Master in Structural Engineering on Advanced Design, at the Universidad de San Francisco Xavier de Chuquisaca, Brazil and Bolivia. In the same year, he was selected as one of five emerging Italian researchers and invited to give a lecture within the 50th Annual Meeting of the Society for Natural Philosophy (SNP) on "New Materials and Problems in Continuum Mechanics". In 2016 he was invited to give courses within the CISM Advanced School and was President-elect for the Falling Walls Lab-Italy. He spent several periods in USA Universities, as Visiting Scholar/Researcher in the Department of Mathematics, Hill Centre, State University of New Jersey, Rutgers (2001) and in 2002 and 2005 at the Departments of Biomedical and Mechanical Engineering, School of Engineering of the City College, New York, working with prof. S.C. Cowin on theory of inhomogeneous elasticity and mechanics of biological materials, subsequent cooperations involving Leibniz-Institut fur Polymerforschung Dresden e.V. (Germany), University of Chicago, Carnegie Mellon University and Virginia Tech (USA), Institute for Biomedical and Neural Engineering, Reykjavik (Iceland), the Centre Cardiologique du Nord de Saint-Denis and Université Paris Descartes, Paris (France), the Department of Physics at Ecole Normale Supérieure, Paris (France), where he is invited professor in 2022.