

Personal profile

Profile Dr. Elli-Maria (Elma) Charalampidou (UK)



Company

Institute of GeoEnergy Engineering, School of Energy, Geoscience, Infrastructure and Society, Heriot-Watt University

Elma Charalampidou works as an Assistant Professor at the Institute of GeoEnergy Engineering (IGE), Heriot-Watt University (HWU). She holds an MEng degree (first class honours, 5-years ptychio) in Civil Engineering from the Aristotle University of Thessaloniki (Greece), as well as a joint PhD in Material Science-Mechanics-Civil Engineering from the Grenoble Institute of Technology (France) and in Petroleum Engineering from Heriot-Watt University (UK), which has grounded her research in experimental mechanics, material science, and non-destructive testing. She had research contracts in France (INPG Enterprise S.A.) and afterwards in Germany (German Research Centre for Geosciences, Helmholtz Centre Potsdam) as a PDRA in the EU-GEISER Project (Geothermal Energy FP7-ENERGY-2009). During her postdoctoral training, she researched, among others, seismology and risk management. Moreover, Elma developed a keen interest in the role of public acceptability on green energy storage and extraction (*e.g.*, deep geothermal), which inspired her to become one of the HWU Leads in Public Engagement.

Elma heads the Earth Materials and Processes for Sustainable Development (EM-π) research group at IGE. Her research team's mission is to advance knowledge of the experimental and computational mechanics of earth materials (Hard Soils and Soft Rocks, Rocks) and artificial materials that mimic nature, to achieve the NET ZERO Goals (green energy storage, sustainable cities, zero waste and circular economy). Elma's research group is particularly interested in community engagement via informal science learning and interaction with community groups, as well as in policy, to make their research findings more accessible to the public and policymakers.

Elma has over 100 science outputs (including publications in peer-reviewed journals, book chapters, conference papers and open-access databases). Over the last 9 years, Elma has received £1 million in competitively won research income as PI or CoI from a variety of national and international research sources, including UKRI-NERC, UKRI-EPSC, UKRI-STFC, DLS, ILL, and HZB, which have supported her experimental work (in cash and in-kind) funded her research team. Elma has supervised 7 PhD students (3 successfully graduated and 4 currently pursuing their degrees), taught over 200 MSc students and tutored over 20 MSc students. Elma has been teaching a variety of MSc courses at IGE, including geomechanics, geophysics and geology. She is also a Fellow of Higher Education (FHEA).

Elma has co-organised 5 sessions at international conferences (+200 to 1000 delegates) in experimental mechanics and material sciences, such as the BSSM 10th International Conference on Advances in Experimental Mechanics, the EGU, the 12HSTAM2019 International Congress on Mechanics, the ICEM19, the 19th International Conference on Experimental Mechanics, and ALERT Geomaterials. She chaired Scotland's 14th Euroconference on Rock Physics and Rock Mechanics (+200 delegates) in 2021

(<https://euroconference2021.org/>). She has served on scientific committees and advisory boards for four international conferences, including the World Tunnel Congress 2023 (WTC2023). Elma worked on the Panel Committee (nominated) for Allocated Beam Time at ESRF (France) for two years, where she reviewed over 100 standard requests for ESRF X-ray beam time. She is currently a member of the ON-DEM COST Action (CA22132), where she also serves as the Science Fair and Public Engagement Manager & co-manager of the Mentoring Programme. She is a member of the International Energy Agency Geothermal - Mine Water Energy Expert group. Elma has been an ENeRG member since 2023.

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