

Prof. Lucia Gemma Delogu

Prof. **Lucia** Gemma Delogu is an head of the Immune-Nanolab at the University of Padua, Italy and she holds a double appointment at Khalifa University, Abu Dhabi, UAE.

Her research lies at the intersection of material chemistry, immunology, and nanobiotechnology, where she investigates the biological interactions of engineered nanomaterials. Prof. Delogu's extensive multidisciplinary background was developed during her postdoctoral research at the University of Southern California (Los Angeles, USA) and the Sanford-Burnham Institute (San Diego, USA). Previously an Assistant Professor at the University of Sassari, Italy, she was recruited to the University of Padua in 2019 and promoted to Associate Professor. She has also held visiting positions at Technische Universität Dresden (Germany) (Excellence in Science Program) and New York University Abu Dhabi (UAE). As Scientific Coordinator for three interdisciplinary projects funded by the European Commission, Prof. Delogu has directed research initiatives involving over 20 academic and industrial partners in Europe, the USA, Canada and the Middle East. She obtained more than €6 million in funding, her research pillars focus on the chemical engineering of nanomaterials and their immunomodulatory properties, pushing boundaries in areas such as nanotoxicology, surface chemistry, and immune applications. Her contributions have been widely recognized with numerous awards, including the Marie S. Curie Individual Fellowship, the Italy's "200 Young Best Talents" by the Italian Ministry of Youth, and the National Institutes of Health NIH's "Bedside to Bench & Back Award." Her group in Padua obtained the first award of the ACSNano championship in a competition at world level.

Prof. Delogu proposed the "NanoImmunity-by-design" concept, where she uses principles of chemical engineering to design nanomaterials with tailored immune responses. She pioneered the use of single mass cytometry analysis in the context of 2D materials. Her research group works on air pollutants including microplastics providing novel insights into the cellular and molecular interactions of materials and particles. Her research has been published in leading journals such as Nature Nanotechnology, Advanced Materials, Nature Communications, Nano Today, and ACS Nano.