

Dott.ssa Lorena Di Zazzo

Lorena Di Zazzo graduated in Chemistry at the University of Rome Tor Vergata in 2019, and in March 2023 she obtained her PhD in Electronic Engineering. She has a fellowship concerning ASTRALI project at the Department of Chemical Science and Technology.

Research activities

Development and design of conductometric sensors

This research activity is focused on the fabrication of conductometric sensors. The conductive layer is based on ink of graphene or conductive polymer. Different substrates can be exploited such as filter paper, face mask and interdigitated electrodes glass slides. For the development of sensors, different systems are used such as inkjet printer, drop casting or electrochemical techniques. Indeed, the conductive layer is complemented with sensing layer such as a class of porphyrinoids, versatile platforms that can interact with target analyte with different interactions. The devices are characterized with UV-Vis, Raman and XPS techniques. The electrical properties are analysed with the IV curves and the sensing properties are tested versus different class of gases.

Synthesis and characterizations of corroles

This research activity regards the synthesis, metalation and functionalization of aryl and alkyl corrole. The study consists in the organic synthesis of corrole and characterization with ^1H NMR and UV-Vis spectroscopy.

Application of Gas chromatography and E-Nose

This research activity is based on the use of Gas Chromatography techniques and a platform of broadly selective sensors, namely Electronic Nose for qualitative and quantitative analysis for different applications such as the medical application of COVID-19 or historic photographic films on different types of samples. The study involves the assignment of peaks for each chromatogram and the data analysis of the responses obtained with the Electronic nose with platform such as MATLAB or Origin.