

**Dr. Maria Rosaria Plutino** received her Ph.D. in Chemical Sciences at the Univ. of Messina (IT) in 1997. In March 1996 she won a two years post-doctoral grant (Human Capital and Mobility), funded by the European Community at the Dep. Oorganisk1 of the Lund Chemical Center (Sweden). In 1999 she had a temporary research contract at the ICTPN-CNR, Messina. Since 2001 she has a permanent researcher position at the Institute for the Study of Nanostructured Materials of the CNR (ISMN) in Palermo (c/o Dip ChiBioFarAm, Univ. of Messina), and 2021 she is senior researcher.

Dr. Plutino is also co-founder, President, and Scientific Manager of ATHENA Green Solutions S.r.l. (an Innovative Start-Up, and Joint and not attended Spin-off by the National Research Council-CNR and by the Univ. of Messina), which operates in the field of Environmental Technologies, focusing in R&D of systems/prototypes/methodologies, based on natural or recycled raw materials, for the resolution of problems deriving from high environmental impact activities with particular reference to seagoing vessels, and marine/coastal and industrial/ urban pollution. The basis of the Innovative Start-up is the Arginare entrepreneurial/patent idea, which has participated in various local, regional, and national business competitions, achieving excellent placements and receiving awards and prizes.

Her main research interest is the rational design, development, and structural study of organometallic complexes of transition metals, supramolecular systems, and nanostructured functional hybrid materials, for applications in the field of optoelectronics, sensors, catalysis, environmental remediation, and biomedicine. In particular, the research activity of Dr. Plutino is focused on the development of new innovative and advanced, multi-component and multifunctional, blended nanohybrids and nanocomposites, obtained thanks to the use of sol-gel and polymerization techniques carried out in the presence of organic/inorganic hybrid silanes or polymeric precursors and organic and inorganic functional nanofillers, which show implemented physical and surface chemical and physical properties, and which can present potential applications in different sectors such as building, naval, textile, environmental, cultural heritage, biomedical, sensoristic, catalytic. Furthermore, Dr. Plutino has set-up green and eco-friendly synthesis protocols starting from natural substances or waste, which lead to the obtainment of functional materials that can also be recycled and re-used.

The research activity of Dr. Plutino is documented by more than 60 papers published in journals with international circulation and two patents in the evaluation phase. She is also a guest-editor and reviewer of different international scientific journals. Part of the results obtained are the outcome of numerous national and international multidisciplinary scientific collaborations, and are included in various research financed projects (“Blue Growth” and “Cultural Heritage” theme lines in the PO FESR 2014- 2020 and PON 2017-2020, where she is the scientific CNR coordinator); they have also been presented at national and international congresses in the form of oral communications and posters.