

26th International Conference on
Nanotechnology and Nanomedicine

May 13, 2022 | Webinar

Received date: 23-10-2021 | Accepted date: 27-10-2021 | Published date: 25-05-2022

Structure and properties of electrochemically synthesized silver nanoparticles in aqueous solution by high-resolution techniques

Scotti L

University of Chieti-Pescara, Italy

The aim of this oral presentation is to deeply investigate the structure and properties of electrochemically synthesised silver nanoparticles (AgNPs) through high-resolution techniques such as transmission electron microscopy (TEM), scanning electron microscopy (SEM), zeta potential measurements and matrix-assisted laser desorption/ionization-time of flight mass spectrometry (MALDI-TOF-MS). Strong brightness, tendency to generate nanoclusters containing an odd number of atoms and absence of the free silver ions in solution was observed. Our laboratory also highlighted that the chemical and physical properties of the AgNPs seemed to be related to their peculiar oxidative state as suggested by X-ray photoelectron spectroscopy (XPS) and X-ray powder diffraction (XRPD) analyses. Finally, the MTT assay tested the low cytotoxicity of the investigated AgNPs. For the first time, nanoclusters solutions with reproducible characteristics are used for investigating the primary effect responsible for cell death.

Recent Publications

1. Luca Scotti, Junior Bernardo Molina-Hernandez, Antonio Aceto,

Tonino Bucciarelli, Domenico Paludi, Luca Valbonetti, Katiuscia Zilli, Clemencia Chaves-López, et al. The membrane depolarization and increase intracellular calcium level produced by silver nanoclusters are responsible for bacterial death. *Nature*. 2021; 11: 21557

2. Cristina Campestre, György Keglevich, János Kóti, Luca Scotti, Carla Gasbarri, Guido Angelini. Microwave-assisted simple synthesis of 2-anilinopyrimidines by the reaction of 2-chloro-4,6-dimethylpyrimidine with aniline derivatives. *RSC Advances*. 2020; 10(21): 12249
3. Luca Scotti, Guido Angelini, Antonio Aceto, Carla Gasbarri. Silver nanoparticles as interactive media for the azobenzenes isomerization in aqueous solution: From linear to stretched kinetics. *Journal of Molecular Liquids*. 2019; 284: 592-598.

Speaker Biography

Luca Scotti has completed his PhD from University of Chieti-Pescara, Italy and BSc. Chemistry at University of Milano, Italy. He is the Professor of Biochemistry at department of Medical, Oral and biotechnology, Italy. He has over 30 publications that have been cited over 300 times and his publication h-index is 11. He has been serving as an editorial board member and topics member of several reputed journals.

e: l.scotti@unich.it