Serena De Santis

DoB 7th june 1985
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Dedicated Physical Chemistry researcher with expertise in the fields of synthesis and characterization of nanoparticles for drugs delivery and functionalization of surfaces for sensors and biomedical applications. Passionate scientific divulger and teacher, with many years of experience at renowned Universities.

RESEARCH EXPERIENCE

December 2018 - present
Research Fellow
Università degli studi Roma Tre – Department of Engineering
Project: Surface functionalization for sensors and biomedical applications

May 2017- April 2018
Research Fellow
Sapienza Università di Roma – Department of Chemistry
Project: Polymer-peptide bioconjugates for therapeutic uses

March 2016 – April 2017
Research Fellow
Sapienza Università di Roma – Department of Chemistry
Project: Synthesis and characterization of self-assembling nanoparticles from pH- and / or heat-sensitive peptide-polymer bioconjugates "

March 2015 – February 2016
Research fellow
Sapienza Università di Roma – Department of Chemistry
Project: New generation biosensors based on choline - amino acids ionic liquids: structural characterization of liquid and the active surface and improvement of device properties

October 2013 – January 2015
Postdoctoral fellow
Sapienza Università di Roma – Department of Chemistry
"Polimeri a peso molecolare, polidispersione ed architettura controllata tramite ATRP per la preparazione di nanoparticelle autoassemblanti e sistemi termosensibili".

EDUCATION

December 2012
Ph.D in Chemical Science
Sapienza Università di Roma – Department of Chemistry in collaboration with "CASPUR - Consorzio interuniversitario per le Applicazioni di Supercalcolo Per Università e Ricerca).
Dissertation: Theoretical and experimental methods for the dynamic and structural study of protein systems.

July 2009
Master Degree with honors (110 e lode/110)
Sapienza Università di Roma – Department of Chemistry
Dissertation: Thermoresponsive nanoparticles from interpolyelectrolyte complexes of block copolymers.

September 2007
Bachelor's Degree with honors (110 e lode/110)
Sapienza Università di Roma – Department of Chemistry
Dissertation: Detection of Fe (II) non-heme halogenases involved in the biosynthesis of halogenated metabolites.

SELECTED SCIENTIFIC PUBLICATIONS

1. S. De Santis, G. Sotgiu, A. Crescenzi, C.Taffon, A. C. Felici, M.Orsini. **"On the chemical composition of psammoma bodies microcalcifications in thyroid cancer tissues"** *Journal of Pharmaceutical and Biomedical Analysis. Accepted*
2. A. Zancla, S. De Santis, G. Sotgiu, C. Taffon, A. Crescenzi, M. Orsini. **"Micro-FTIR spectroscopy as robust tool for psammoma bodies detection in papillary thyroid carcinoma"** *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy,* **2020**, 229, 117984 *IF: 2.291*
3. C. Battocchio, S. Concolato, S. De Santis, M. Fahlman, G. Iucci, M. Santi, G. Sotgiu, M. Orsini. **"Chitosan functionalization of titanium and Ti6Al4V alloy with chloroacetic acid as linker agent"** *Materials Science & Engineering* C, **2019**, 99, 1133–1140. *IF: 5.080*
4. S. De Santis, F. Novelli, F. Sciubba, S. Casciardi, S. Sennato, S. Morosetti, A. Scipioni, G.Masci. **"Switchable length nanotubes from a self-assembling pH and thermosensitive linear L,D-peptide-polymer conjugate"** *Journal of Colloid and Interface Science*, **2019**, 547, 256-266. *IF: 5.091*
5. F. Novelli, S. De Santis, M. Diociaiuti, C. Giordano, S. Morosetti, P. Punzi, F. Sciubba, V. Viali, G. Masci, A. Scipioni. **"Curcumin loaded nanocarriers obtained by self-assembly of a linear D,L-octapeptide-poly(ethylene glycol) conjugate."** *European Polymer Journal*, **2018**, 98, 28–38.
6. F. Novelli, S. De Santis, P. Punzi, C. Giordano, A. Scipioni, G. Masci. **"Self-assembly and drug release study of linear L,D-oligopeptide-poly(ethylene glycol) conjugates."** *New Biotechnology* **2017**, 37, 99–107.
7. V. Perri, M. Pellegrino, F. Ceccacci, A. Scipioni, S. Petrini, E. Gianchecchi, A. Lo Russo, S. De Santis, G. Mancini, A. Fierabracci. "**Use of short interfering RNA delivered by cationic liposomes to enable efficient down-regulation of ptpn22 gene in human T lymphocytes."** *Plos One,* **2017**, https://doi.org/10.1371/journal.pone.0175784
8. M. C. Di Gregorio, M. Gubitosi, L. Travaglini, N. V. Pavel, A. Jover, F. Meijide, J. Vázquez Tato, S. Sennato, K. Schillén, F. Tranchini, S. De Santis, G. Masci, L. Galantini. **"Supramolecular assembly of thermoresponsive steroidal surfactant with oppositely charged thermoresponsive block copolymer."** *Physical Chemistry Chemical Physics* **2017**,19, 1504-1515.
9. S. De Santis, R. Chiaraluce, V. Consalvi, F. Novelli, M. Petrosino, P.Punzi, F. Sciubba, C. Giordano, G. Masci, A. Scipioni. **"PEGylated β-sheet breaker peptides as inhibitors of β-amyloid fibrillization."** *ChemPlusChem*, **2017**, 82, 241 – 250.
10. P. Punzi, S. De Santis, C. Giordano, M. Diociaiuti, F. Novelli, G. Masci, A. Scipioni. **"Bioinspired nanotubes from self-assembly of a linear L,D-oligopeptide-Poly(ethyleneglycol) conjugate"** *Macromolecular Chemistry and Physics,* **2015**, 216, 439-449.
11. S. De Santis, M. Diociaiuti, C. Cametti, G. Masci. **"Hyaluronic Acid and Alginate Covalent Nanogels by Template Cross-Linking in Polyion Complex Micelle Nanoreactors."** *Carbohydrate Polymers*,**2014**, 101, 96-103.
12. S. De Santis, R. D. Ladogana, G. Masci, M. Diociaiuti. **"Pegylated and Thermosensitive Polyion Complex Micelles by Self-Assembly of Two Oppositely and Permanently Charged Diblock Copolymers"** *Macromolecules*, **2010,** 43 (4), 1992-2001.

OTHER

March 2014 – Professor of General Chemistry

Università degli studi Roma Tre – Department of Engineering

English: comprehension level B2; spoken level C1; written production C1. (Evaluation according to the Common European Framework of Reference for Languages).