



Nume prenume conducător doctorat: Prof. Dr. Pinzaru Simona

Nr. locuri la doctorat: 1/2

Tip loc la doctorat: cu bursă și cu frecvență

Membrii comisiei de admitere:

1. Prof. Dr. Simona Pinzaru
2. Prof. Dr. Vasile Chis
3. CS I Dr. Alina Magdas

Tematica pentru examenul scris:

1. Applied Raman and SERS techniques for aquatic environment and blue bioeconomy
2. SERS applications in nanotoxicology and chemical ecology

Tematică pentru interviu :

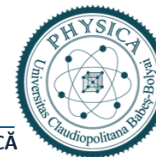
1. SERS application in classification of marine plankton. SERS use in detection of NIS (non-indigenous species) in plankton
2. Nanoparticles facing microorganisms: SERS, nanotoxycology, nano risk

References

1. Cintă Pinzaru, S., Müller, Cs., Tomšić, S., Venter, M. M., Cozar, B. I., and Glamuzina, B. (2015); New SERS feature of β -carotene: consequences for quantitative SERS analysis. *J. Raman Spectrosc.*, 46: 597– 604. doi: [10.1002/jrs.4713](https://doi.org/10.1002/jrs.4713).
2. S. C. Pinzaru, C. Müller, S. Tomšić, M. M. Venter, I. Brezestean, S. Ljubimir and B. Glamuzina, *RSC Adv.*, 2016, 6, 42899 DOI: 10.1039/C6RA04255D *RSC Adv.*, 2016,6, 42899-42910
3. BLUE BIOECONOMY – TOWARDS A STRONG AND SUSTAINABLE EU ALGAE SECTOR; EC, Brussels, 15.11.2022 SWD(2022) 361 final. https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12780-Blue-bioeconomy-towards-a-strong-and-sustainable-EU-algae-sector_en
4. Novikova, Nina & Matthews, Hannah & Williams, Isabelle & Sewell, Mary & Nieuwoudt, Michel & Simpson, Cather & Broderick, Neil 2022 Detecting Phytoplankton Cell Viability Using NIR Raman Spectroscopy and PCA. *ACS Omega*. 7. 10.1021/acsomega.1c06262.
5. Sushkov, Nikolai & Galbacs, Gabor & Janovszky, Patrick & Lobus, Nikolay & Labutin, Timur. 2022 Towards Automated Classification of Zooplankton Using Combination of Laser Spectral Techniques and Advanced Chemometrics. *Sensors*. 22. 8234. 10.3390/s22218234.
6. Candeloro, Patrizio & Tirinato, Luca & Malara, Natalia & Fregola, Annalisa & Casals, Eudald & Puentes, Victor & Perozziello, Gerardo & Gentile, Francesco & Coluccio, Maria & Das, Gobind & Liberale, Carlo & De angelis, Francesco & Di Fabrizio, Enzo 2011 Nanoparticle microinjection and Raman spectroscopy as tools for nanotoxicology studies. *The Analyst*. 136. 4402-8. 10.1039/c1an15313g.
7. Germond, Arno & Kumar, Vipin & Ichimura, Taro & Moreau, Jérôme & Furusawa, Chikara & Fujita, Hideaki & Watanabe, Tomonobu 2017 Raman spectroscopy as a tool for ecology and evolution. *Journal of The Royal Society Interface*. 14. 20170174. 10.1098/rsif.2017.0174.
8. Guo, Huiyuan & He, Lili & Xing, Baoshan 2017 Applications of Surface-Enhanced Raman Spectroscopy on Nanoparticle Analysis in the Environment. *Environ. Sci.: Nano*. 4. 10.1039/C7EN00653E.
9. Ren, Bin & Perez Jimenez, Ana & Lyu, Danya & Lu, Zhixuan & Liu, Guokun 2020 Surface-enhanced Raman spectroscopy: Benefits, trade-offs and future developments. *Chemical Science*. 11. 10.1039/D0SC00809E.



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9. Wang, Xiang & Huang, Sheng-Chao & Hu, Shu & Yan, Sen & Ren, Bin 2020 Fundamental understanding and applications of plasmon-enhanced Raman spectroscopy. 2. 253–271. 10.1038/s42254-020-0171-y.
10. Yesilay, Gamze & Sariçam, Melike & Akhatova, Farida & Danilushkina, Anna & Fakhruллин, Rawil & Culha, Mustafa 2017 Assessing nanomaterial toxicity with surface-enhanced Raman scattering. SPIE Newsroom. 10.1117/2.1201612.006763.

Date, time and place of exam: 18 July 2023, time: 2.00 pm;

room: „Hermann Oberth2, Main Building, UBB, Second Floor, Kogalniceanu 1, RO-400084 Cluj-Napoca.