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| STIPEND OFFER (PhD STUDENT) | |
| Position in the project: | PhD Student |
| Scientific discipline: | PHYSICS |
| Job type: | Stipend |
| Stipend amount/month | 5000 PLN/month |
| Position starts on: | 01.10.2024 |
| Duration: | 3 years (possible 1 year extension) |
| Institution: | Faculty of Physics, Adam Mickiewicz University in Poznan, Poland |
| Project leader: | Prof. George Fytas |
| Project title: | High-frequency mechanics of polymer-grafted nanoparticle metamaterials (METAGRAFT) |
| Project description: | In this project, we aim to investigate how the elasticity, photo-thermal effects, and hypersonic stopbands (all polarizations) can be tuned by architected GNP, discovering new metamaterial properties and ambient and high hydrostatic pressure. Establishing a reliable predictive power will open new application pathways of soft-matter-based high-frequency phononics.To make this vision real, we will employ state-of-the-art GNP synthesis and experimental tools (e.g., Brillouin light scattering, frequency domain thermoreflectance, and rheometry) in close international and multidisciplinary collaboration between five research groups from Poland, Germany, Spain, Greece, and the United States.We will verify the research hypotheses: (i) High-frequency elasticity should deviate from a continuum-level behavior depending on graft conformation and GNP internal structure and packing. (ii) The subwavelength hypersonic stopband (hybridization) should display a complex dependence on grafting density, lattice constant, and architecture. (iii) The amplification of narrow-band metamaterial absorption in the visible regime and modulated thermal transport should relate to the phoxonic features of GNPs. |
| Key responsibilities include: | Evaluation of mechanical properties of 2D and 3D assemblies of polymer grafted nanoparticles using Brillouin light scattering (BLS).Day-to-day laboratory work on sample preparationMaterials' examination by BLS, UV-Vis spectroscopy, and data analysis. |
| Profile of candidates/requirements: | 1. MSc degree in physics, material science, or physical chemistry. 2. Basic knowledge about visible light spectroscopy and mechanics of materials. 3. The person will be chosen in a competition according to the NCN and AMU regulations and practices.  Good command of English |
| Required documents: | 1. CV with publication and presentation records and other scientific achievements 2. Copy of the master's diploma (original and translation) 3. Reference letter from a scientific advisor |
| We offer: | We offer participation in high-impact research, enabling fast career development. In particular:Accesses to unique experimental toolsDedicated training and research visits in MPIP MainzCo-supervision from a reputable international expert in the fieldBroad international collaboration. Secondments in Barcelona and Mainz. |
| Please submit the following documents to: | bartlomiej.graczykowski@amu.edu.pl |
| Application deadline: | 05.09.2024 |

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2. The personal data controller has appointed a Data Protection Officer overseeing the correctness of the processing of personal data, who can be contacted via e-mail: iod@amu.edu.pl.
3. The purpose of processing your personal data is to carry out the recruitment process for the indicated job position.
4. The legal basis for the processing of your personal data is Article 6(1)(a) of the General Data Protection Regulation of 27 April 2016 and the Labour Code of 26 June 1974. (Journal of Laws of 1998 N21, item 94 as amended).
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