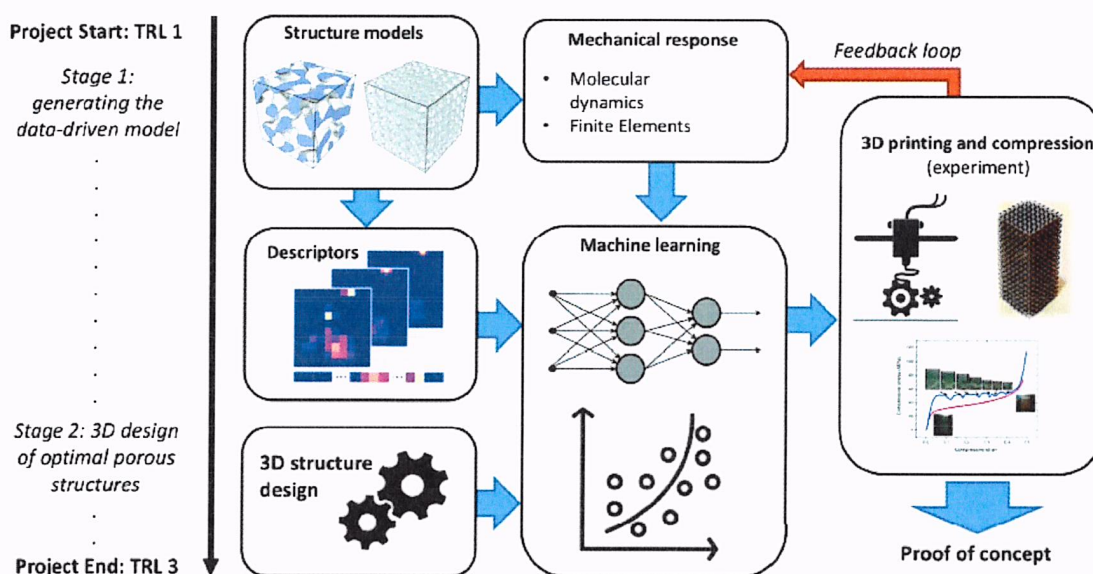## Open call

Postdoctoral position in

Dioscuri Centre in Topological Data Analysis

related to M-Era-Net Project

Applications must be submitted by February 28, 2023. Please send them to pdlotko@impan.pl. The application should contain a CV, a research statement, a list of publications and a brief description of the candidate's work in the relation of the project.

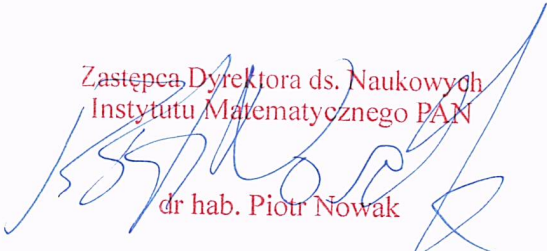After inviting a Candidate to an interview two letters of recommendation will be required.

About the project. The project, in collaboration with IMDEA Institute in Madrid and Technion (Israel Institute of Technology), aims to model new generation of materials. It is located at the interface between data and material science and focused on exploration of the space of possible material structure and understanding the structure-property relationships within.

Your work in the project. Your task will be to generate a wide range of porous materials. The generation procedure will most likely continuously depend on a number of parameters. The first task is to understand and explore the space of possible materials using tools from Topological Data Analysis and Machine Learning. Subsequently, a number of properties of a material will be computed and we will aim to obtain an optimal shape that provides the best values of the material properties. The project require both knowledge of mathematics and algorithms as well as proficient codding skills.

About the Dioscuri Centre in Topological Data. The Dioscuri Centre is a part of Max Planck Society environment. The Centre is led by Paweł Dłotko. Paweł is a mathematician and computer scientists; he graduated in 2012 from Jagiellonian University. Subsequently he was working as a researcher at the University of Pennsylvania, Inria in Saclay, and in Swansea University. Paweł's aim is to use rigorous methods of mathematics outside mathematics. To achieve this Paweł have developed a number of computational techniques that have been implemented in software libraries including Persistence Landscape Toolbox, taking part in development of the Gudhi library as well as the RBallMapper CRAN package. Paweł is actively working with experts in electrical engineering, economics, finance, material science, neuroscience, medical professionals and more. The Centre currently hire four postdocs (Justyna, Bartosz, Michał and Rafał and three PhD students Davide, Jan and Niklas). Please consult our webpage for further details. Please feel free to email us about any informal questions.

Additional information can be obtained at https://dioscuri-tda.org/. For informal questions please contact pawel.dlotko@impan.pl

Zastępca Dyrektora ds. Naukowych
Instytutu Matematycznego PAN

dr hab. Piotr Nowak