Postdoc position #1 : New approach to development of efficient materials for direct conversion of heat into electricity

Location: Thermoelectric Research Laboratory, AGH University of Science and Technology, Cracow, Poland
Leader: Prof. Krzysztof Wojciechowski
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Description of the project

Project is carried out within the TEAM-TECH program of the Foundation for Polish Science. The aim of the project is the development of new composite thermoelectric materials and prototypical highly-efficient thermoelectric modules. The project is based on a new paradigm of abandonment of the commonly pursued goal of beating the records of the maximum value of thermoelectric figure of merit parameter ZTmax. Instead, this project concentrates on searching for new paths for development of thermoelectric materials with maximum averaged value of ZTaver over a wide temperature range.

The project will be carried out by the interdisciplinary team consisting of PhD students and post-docs specializing in theoretical calculations of electronic structure, heat transport modeling, base thermoelectric materials synthesis and construction of modules for thermoelectric generators.

Research partners in the project: Max Planck Institute for Chemical Physics of Solids (Dresden, Germany), Institute of Pulsed Power Science of Kumamoto University (Kumamoto, Japan), Department of Physics of Indian Institute of Science (Bangalore, India).

Profile of candidate

1. PhD in physics or chemistry or materials science
2. Experience in powder metallurgy techniques (e.g. hot-pressing, spark plasma sintering)
3. Experience in construction of thermoelectric modules is desired

Requirements

1. Manufacturing of thermoelectric modules
2. Research on physical and chemical properties of materials
3. Characterization of operational parameters of thermoelectric modules

Conditions:
Full time contract (up to 3 years)
Position starts on: 1 October 2017
Contract period: to 30 September 2018 (with possibility of up to 2 years extension)
Gross salary: 8000 to 9000 PLN per month