

2018 Helmholtz – OCPC – Program for the involvement of postdocs in bilateral collaboration projects

KIT-08

PART A

Title of the project: High capacity anode materials for alkali-ion batteries

Helmholtz Centre and institute:

Karlsruhe Institute of Technology, Helmholtz Institute Ulm

Project leader:

Prof. Dr. Stefano Passerini

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Description of the project (max. 1 page):

Development of high capacity anode materials for rechargeable alkali-ion batteries, including:

- 1- Rational design and synthesis of alloying materials, such as silicon and germanium, conversion-alloying materials, such as tin oxides or Me-doped zinc oxides, and conversion materials, including lithium metal;
- 2- Understanding the chemical and physical properties of the above mentioned materials;
- 3- Investigate and, possibly, improve their electrochemical performance as anode materials in alkali-ion batteries;
- 4- Developing appropriate electrolytes for the employment of the above-mentioned materials in full, alkali-ion cells.

Description of existing or sought Chinese collaboration partner institute (max. half page):

Some contacts exist with the Nanjing University of Aeronautics and Astronautics, Dept. of College of Materials Science and Engineering.

Required qualification of the post-doc:

- PhD in Chemistry, Physics, Materials Science, or Chemical Engineering
- Experience with materials synthesis and their electrochemical characterizations as electrodes in alkali-ion batteries
- Additional skills in physic-chemical techniques such as XRD, SEM, BET and Raman spectroscopy
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PART B

Documents to be provided by the post-doc, necessary for an application to OCPC via a postdoc-station in China, which is affiliated to a research institution like a university:

- Detailed description of the interest in joining the project (motivation letter)
- Curriculum vitae, copies of degrees
- List of publications
- 2 letters of recommendation
- Proof of command of English language

PART C

Additional requirements to be fulfilled by the post-doc:

- Max. age of 35 years
- PhD degree not older than 5 years
- Very good command of the English language
- Strong ability to work independently and in a team