

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

PART A

Title of the project: The viruses in the oil reservoirs

Helmholtz Centre and institute: Institute of Virology, Helmholtz Zentrum Munich

Project leader: Dr. Li Deng and Professor Ulrike Protzer

Web-address: <https://www.helmholtz-muenchen.de/viro/>

Description of the project (max. 1 page):

Microbial biodegradation is a key factor influencing the quality of oil. The biological activity that governed by numerous processes of which the current perspective is only evolving hydrology, biogeochemistry and environmental microbiology. One important piece of the puzzle, however, is missing completely: viruses.

This project now aims to elaborate the viral-driven degradation in oil reservoirs. We hypothesize that oil degradation is greatly impacted by viruses through (i) horizontally transfer host metabolic genes related to alkane degrading (hypothesis 1), and (ii) specifically lysing key bacterial degraders (hypothesis 2). In a cutting-edge and interdisciplinary research endeavour, we will verify the hypotheses using carefully designed field surveys and microcosms.

The objectives of this project can revolutionize the current view on drivers behind microbial degradation of our most important energy resources with far-reaching implications for fundamental, interdisciplinary understanding of ecological processes, bioremediation, and oil exploration.

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

Chinese Universities or institutions with strong programme and expertise in either the general science and technology, or medical oriented are welcome to apply. The expertise in the following list are beneficial: (1) molecular biology/microbiology or virology, (2) bioinformatics, (3) biotechnology especially synthetic biology.

Required qualification of the post-doc:

- PhD in: molecular biology/virology/Microbiology , or bioinformatics
- Experience: intensive experience of microbial cultivation and physiology, or viral isolation; or intensive experience of metagenomics.

Additional skills: Flow cytometry, 2nd/3rd generation sequencing

PART B

Documents to be provided by the post-doc, necessary for an application to OCPC via a postdoc-station:

- 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