

## Thesis Project Offer

*Joint Research and Education Programme "Palestinian-German Science Bridge PGSB"  
Forschungszentrum Jülich GmbH & Palestine Academy for Science and Technology*

### Thesis type\*

<input type="checkbox"/> BSc	<input checked="" type="checkbox"/> MSc	<input checked="" type="checkbox"/> PhD	Intended starting date (approx.): 01-03-2023
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### Contact details of supervisor/responsible host at Forschungszentrum Jülich

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Function*	Institute and homepage of institute*
Group leader	IBI-7 ( <a href="https://www.fz-juelich.de/de/ibi/ibi-7">https://www.fz-juelich.de/de/ibi/ibi-7</a> )

University affiliation in Germany*
Heinrich Heine Universität Düsseldorf

### Co-Supervisor at Palestinian university (if applicable)

Title	Degree	First name	Surname
Title	Degree		

Phone	E-mail

University/institution	Department/faculty/institute

### Project description\*

The subinstitute Structural Biochemistry (IBI-7) aims to understand these interactions and to determine the three-dimensional structure of protein complexes involved in crucial cellular processes. The function of every cell and organism depends critically on the dynamic interactions between biological macromolecules and on their correct 3D structure. Faulty interactions and misfolded structures lead to various neurological disorders. Recently, we have shown that for psychiatric disorders (PDs), the protein risk factor also show hallmark structural changes pertaining proteinopathy. Therefore, to understand the anomalies associated with the biochemical networks that entail schizophrenia and related PDs, we are developing quantitative nuclear magnetic resonance spectroscopy (qNMR) metabolomics techniques. The Forschungszentrum Jülich and the Heinrich-Heine Universität Düsseldorf house the bioNMR facility with several NMR spectrometers and computational resources for the successful implementation of the project. This thesis specifically deals with the developing qNMR metabolomics assays for diagnosis of psychiatric disorders from biological fluids. Your tasks include preparation of blood and urine samples for qNMR measurements; Performing the NMR experiments, annotation of the biomolecules and data-analytics using the programming language R.

Date*	Signature*
06.12.2022	Abhishek Cukkemane

\* required field