

# ULTRAFAST SCANNING TRANSMISSION ELECTRON MICROSCOPY FOR ANALYSIS OF AMORPHOUS BEAM SENSITIVE MATERIALS

Are you ready to be at the cutting edge of electron microscopy? The Unité Matériaux et Transformations (UMET) at the University of Lille is seeking a highly motivated PhD candidate to embark on a project to study poorly crystallized samples at the nanoscale. This is a unique opportunity to contribute to a project that combines innovation in scanning transmission electron microscopy (STEM) with the study of challenging samples.

## PROJECT OVERVIEW:

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This ambitious PhD project aims to harness the capabilities of 4D-STEM utilizing the cutting-edge TIMEPIX3 events-based detector. Our recent advancements have paved the way for a leap in acquisition speed, enabling non-destructive examination of beam-sensitive materials with unprecedented resolution.

## HIGHLIGHTS:

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- Contribute to the advancement of innovative methodologies that fully leverage the capabilities of our TIMEPIX3 detector,
- Enable the analysis of materials that are critical to solving scientific and technological challenges.
- Work at the intersection of cutting-edge technology and critical scientific inquiry.

## WHAT WE OFFER:

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- A vibrant research environment at the forefront of materials science and electron microscopy.
- The opportunity to work on a high-impact project with implications for both fundamental science and practical applications.
- Access to state-of-the-art facilities and collaboration with international experts in the field.

## CANDIDATE PROFILE:

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- A master's degree in Physics, Materials Science, or a related field.
- An analytical mindset with a passion for problem-solving and a keen interest in the study of materials at the nanoscale.
- Coding proficiency in Python coupled with a robust enthusiasm for scientific data analysis.
- Excellent communication skills and the ability to work collaboratively in an interdisciplinary team.
- Fluency in both spoken and written English.

## HOW TO APPLY:

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Please submit your application including a CV, a motivation letter, and contact information for two references to [damien.jacob@univ-lille.fr](mailto:damien.jacob@univ-lille.fr) and [francisco.de-la-pena-manchon@univ-lille.fr](mailto:francisco.de-la-pena-manchon@univ-lille.fr). The deadline for applications is **30 May 2024**.

Join us at UMET, University of Lille, to embark on a journey of discovery that will expand the frontiers of electron microscopy.

*The laboratory is located in a sector covered by the protection of scientific and technical potential (PPST) and therefore, by the regulations, your admission must be authorised by the competent authority of France's Ministry of Higher Education and Research (MESR)*