Postdoctoral position in quantum entanglement theory

- **Application deadline:** Monday, October 3, 2022.
- **Starting date:** flexible from January 2023
- **Duration:** 2 years (with a possible extension to 3 years)
- **Contract type:** Full-time, fixed term
- **Location:** Department of Physics, University of Liège, Belgium

The research groups of Profs. Thierry Bastin and John Martin are offering a new joint theoretical postdoctoral position in the field of quantum entanglement. The research project is encompassed in a large national effort aiming to prepare Belgium for the new era of quantum technologies via the Excellence Of Science (EOS) grant "*Creating Highly Entangled Quantum States in the NISQ era*" (CHEQS). This is the second postdoctoral position to be filled in this framework.

Research topic: The successful candidate will be working on the *creation, manipulation and characterisation of entanglement in spin systems*, with a particular emphasis on regimes relevant for spin systems based on nitrogen-vacancy centers, an experimental platform available within the consortium. The candidate will contribute to develop the theoretical framework needed for studying the open system dynamics and the entanglement of these spin assemblies, from their preparation in specific genuine multipartite entangled states, to their robustness to noise, their characterisation and monitoring by measurement and their potential for quantum sensing tasks.

Work environment: The candidate will interact closely with Prof. Bastin, Prof. Martin and Dr. Damanet, who have an extensive expertise in entanglement theory, spin and open system dynamics. The host research groups are a part of the larger research unit CESAM of the University of Liège. Also, as the research project is embedded in a Belgian national programme, the candidate will be fully integrated into a dense network of theoretical and experimental research groups in quantum physics across six universities (UGent, ULB, ULiege, KULeuven, UHasselt, UAntwerp) and one research and development hub, imec. This will offer many possibilities for collaborations and strongly benefit the career development and international visibility of the candidate.

Candidate profile: The candidate should have a PhD in quantum physics and a strong background and track record in quantum entanglement theory and/or quantum optics and/or open quantum systems. The candidate should be highly motivated and present excellent communication skills.

Application procedure: Please send a CV and a cover letter (including the contact details of two references) to the email addresses mentioned in the contact information below.

Contact: For more information, please feel free to contact

- Prof. Thierry Bastin - T.Bastin@uliege.be
- Prof. John Martin - jmartin@uliege.be
- Dr. François Damanet - fdamanet@uliege.be