



Call for Expression of Interest
Marie Skłodowska-Curie Postdoctoral Fellowship
(HORIZON-MSCA-2024-PF-01-01)

The University of Malta (UM) is interested in hosting Marie Skłodowska-Curie Action fellows to work in its research teams and welcomes expressions of interest from excellent post-doctoral researchers to apply for the Postdoctoral Fellowship call.

University of Malta (UM) is the sole public and highest teaching institution in Malta, with its structures being in line with the Bologna Process and the European Higher Education area. UM has a 400-year history and there are over 11,500 students including 1,000 foreign/exchange students from nearly 92 different countries, following fulltime or part-time degree and diploma courses. Around 3,500 students graduate each year. UM is comprised of 14 Faculties and several other campuses: at Valletta, Marsaxlokk and Gozo. As of 2020, the UM employed a total of 2,848 employees including academics, administrative, technical and industrial staff (1,885 on a full-time basis and 963 on a part-time basis). Over the past ten years, the UM has been involved as coordinator and partner in numerous EU-funded projects under various Programmes including Horizon Europe, Horizon 2020, FP7, Erasmus+, Lifelong Learning Programme, INTERREG, National Funding and various other international and national programmes and initiatives. The UM is also represented in a number of European and International University networks and groups.

[Faculty of Science](#)

[Department of Chemistry](#) - Molecular Logic Gates Laboratory

In my laboratory we engineer intelligent molecules and materials capable of performing information processing and logic-based calculations using chemical inputs and light as the output. The research entails synthesizing novel molecular entities and polymers with built-in Boolean logic algebraic functions (e.g., YES, NOT, OR, AND etc.). The research combines concepts from mathematics and computer science with chemistry for applications in environmental and medical diagnostic applications.

This multi-disciplinary research involves organic, analytical and polymer chemistry as well as computer science and mathematics. Projects involve the design, synthesis and characterization of new functional molecules and polymers using molecular characterization techniques including ^1H & ^{13}C NMR and IR spectroscopy and mass spectrometry. The intelligent molecules/materials are studied by UV-visible absorption and luminescence spectroscopy and studied within the context of electron transfer theories and Boolean logic.

Research Field: Chemistry (CHE)
Computer Science (Boolean Algebra)
Materials Science

Keywords: Molecular logic gate, photoinduced electron transfer, fluorescence, organic synthesis, polymer, supramolecular.



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ta' Malta

**Research Support
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The selected candidates will receive dedicated support from the supervisor [Prof. David C Magri](#) and the Research Support Services Directorate to write a successful proposal and submission.

Interested candidates must be in possession of a doctoral degree with not more than 8 years post PhD research experience and must not have resided in Malta for more than 12 the past during the past 3 years. Furthermore, their research interests should be relevant to the above project. Kindly send a covering letter and CV to the corresponding supervisor, [Prof. David C Magri](#), keeping in copy funding.rssid@um.edu.mt with 'MSCA-PF-2024 *'candidate name'*' as the email subject by **24 May 2024**.