 

**Research Assistant/ Postdoctoral Researcher – Nanoscale Biophotonics Laboratory**

**School of Natural Sciences**

**University of Galway**

**Ref. No. University of Galway 002-23**

Applications are invited from suitably qualified candidates for a full time, fixed term position(s) as a Research Assistant/ Postdoctoral Researcher with the Nanoscale Biophotonics Laboratory at the University of Galway.

The position(s) is funded by the H2020 programme (PAT4Nano, Grant Agreement 862453) and is available from 1st February 2022 or as soon as possible thereafter, until 31st October 2023.

**The Project:**

PAT4Nano offers an integrated, end user-driven, approach to develop and deploy different, yet complementary particle size measurement technologies for in- and online real-time monitoring. These will quantify particle size distribution and chemical composition in nanosuspensions. With the consortium end user partners (*Agfa-Gevaert, Janssen Pharmaceutica, and Johnson Matthey*), PAT4Nano will focus on applications in pharmaceuticals, inks/pigments, and materials for catalysis, batteries, and glass manufacture. Continuous, rapid, and reliable real-time data from PAT4Nano tools will provide more comprehensive process information than current offline measurements enabling manufacturers to obtain insights into the fundamental dynamics of nanoparticle-based processes. Furthermore, this information can enable continuous process feedback, opening new opportunities to implement real-time process control and feed-forward loops to correct for process variances, leading to better end product consistency and higher process efficiencies. Multi-PAT solutions, where several complementary measurement methods are combined, together with advanced data processing, will further enhance capability by increasing the information that can be extracted from measurements, extending the application range further. PAT4Nano solutions will improve process control and efficiency, and the quality of nanosuspension products.

**See more on:** [**www.pat4nano.com**](http://www.pat4nano.com) **and** [**www.universityofgalway.ie/nanoscale/**](http://www.universityofgalway.ie/nanoscale/)

**Job Description:**

The successful candidate(s) will work under the supervision of Prof. Alan Ryder and postdoctoral researchers to support the work plan approved in PAT4Nano in terms of mostly undertaking experimental laboratory work involving Raman spectroscopy and/or the development of online Raman instrumentation. The candidate(s) will assist in the research and technical work, consisting of developing Raman spectroscopy methods for the online analysis of nanosuspensions. The candidate(s) will support the reporting and management of the project and will engage with the dissemination activities at the different regions of the consortium.

**Duties:** The successful candidate(s) shall be expected to carry out the following duties as part of his/her role:

**Research**

* Undertake Raman and DLS measurements of inorganic and organic nanosuspensions.
* Undertake experimental methods to validate the novel PAT4Nano analytical methods and instrumentation being developed.
* Where appropriate help develop prototype instrumentation for online Raman measurements.
* Support the PI on liaising and reporting to the EU Project Officer which includes preparation of periodic scientific and financial reports.
* Deliver presentations and undertake outreach activities relevant to PAT4Nano as required by the PI for the successful delivery of the project.
* Assist in the management of the NBL laboratory facilities being used for PAT4Nano.
* Maintain and record all experimental data related to the project on a secure backup system. All experimental methodologies should be documented in paper lab notebooks or electronic lab notebooks or reference made to their location.
* Undertake any other activities relevant to the PAT4Nano project as directed by the PI.
* **At Postdoctoral Resarcher level,** the successful candidate is expected to: define research objectives and carry out original and significant research that advances the Raman based analytical methodology; develop methods and techniques that add to the intellectual understanding of the methodology (i.e. undertake mIe modelling); and decide on research activities in collaboration with colleagues.

**Research Administration/Management**

* To complete the administrative work to support the programme of research.
* To carry out any additional duties as may reasonably be required within the general scope and level of the post.
* Manage own personal and research resources (including where required, laboratories, and specialist equipment) appropriately.
* Keep records as directed and in line with Funder/University policy as appropriate.
* Know the legal requirements regarding data protection and confidentiality data protection requirements.
* **At Postdoctoral Resarcher level,** the successful candidate is expected: to help manage the PAT4Nano research project; support the Principal Investigator and research group in the design and development of the research programme; to complete administrative and management work associated with your programme of research; to identify potential funding sources and to prepare and write bids for funding proposals; to contribute and support the development of research grant funding applications; to co-ordinate the work of research team; to organise and conduct meetings with research team to clarify objectives, develop work plans/timetables for research team and communicate progress; to develop and implement quality assurance measures

**Dissemination**

* Present on research progress and outcomes e.g., to bodies supervising research; conferences, steering groups; other team members, as agreed with the PI.
* Engage in the dissemination of the results of the research with the support of and under the supervision of your Principal Investigator.
  + Write up results from own research activity.
  + Publish on a regular basis.
  + Assess research findings for the need/scope for further investigations / commercial exploitation.
  + Translate knowledge of advances in the subject area into research activity.
* Contribute to the research project’s dissemination in whatever form - report, papers, chapters, book.
* Attend and network at relevant conferences and PAT4Nano meetings as appropriate.

**Research Supervision and Teaching & Training**

* Mentor and assist, as appropriate and as directed, the research graduate students in the NBL.
* **At Postdoctoral Resarcher level,** to interact closely with postgraduate research students who are studying for a Masters or a PhD and possibly have an agreed role in supporting these students in their day to day research in conjunction with an academic supervisor.
* Engage in appropriate training and professional development opportunities as required by your Principal Investigator, your School or Institute, or the University.

**Other**

* Where appropriate, work with PI to register patents to protect intellectual property.
* Participate in internal / external networks for the exchange of information and to form relationships for future research collaboration.
* Engage in the wider research and scholarly activities of your research group, School and Institute.
* May contribute to the College/School/Research Unit through, for example, participating in promotion activity such as student Open Days, career days, or contribute to public events such as science week etc.

**Qualifications/Skills required:**

The position will require an individual with strong background in electronic engineering, electromagnetic device prototyping and testing. The successful candidate will work closely with academic and industrial partners to evaluate the efficacy of the proposed analytical techniques.

**Essential Requirements:**

* Honours M.Sc. degree in Chemistry, Physics, or an equivalent discipline
* Proven experimental experience in the use of particle sizing techniques and/or Raman spectroscopy.
* Experience in the analysis of Active Pharmaceutical Ingredients (APIs).
* Excellent verbal and written communication skills (English language).
* Track record in a research and development environment.
* Track record of publishing in analytical science or instrumentation journals.
* Clear evidence of good interpersonal skills.

**Desirable Requirements:**

* PhD in Chemistry/Physics (or related discipline) or 6 years relevant research/industry experience post qualification
* Experience in working as part of a multi-disciplinary team.
* Experience in the analysis of inorganic or organic nanoparticles.
* Experience in the development of optical instrumentation.
* Mobility in EU countries to attend meetings and seminars.
* Experience in physics, optics, or chemistry with a focus on spectroscopic instrumentation.
* Experience in the presenting of research findings to technical / non-technical audiences.

**Salary**:

* **Research Assistant** €28,701 - €38,390 per annum pro rata for shorter and/or part-time contracts
* **Postdoctoral Researcher** €41,209 – €50,189 per annum pro rata for shorter and/or part-time contracts

Public sector pay policy rules pertaining to new entrants will apply.

**Start date**: Position is available from February 1st, 2023.

**Continuing Professional Development/Training**:

The University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment – see [www.universityofgalway.ie/rdc](http://www.universityofgalway.ie/rdc) for further information.'

Further information on research and working at University of Galway is available on [Research at University of Galway](http://www.nuigalway.ie/our-research/)

For information on moving to Ireland please see [www.euraxess.ie](http://www.euraxess.ie)

Further information about the Nanoscale Biophotonics Laboratory is available at [www.universityofgalway.ie/nanoscale/](http://www.universityofgalway.ie/nanoscale/) .

Informal enquiries concerning the post may be made to Professor Alan Ryder, [alan.ryder@universityofgalway.ie](mailto:alan.ryder@universityofgalway.ie)

**To Apply:**

Applications to include a covering letter, CV, and the contact details of three referees should be sent, via e-mail (in word or PDF only) to Professor Alan Ryder, [alan.ryder@universityofgalway.ie](mailto:alan.ryder@universityofgalway.ie)

Please put reference number University of Galway 002-23 in subject line of e-mail application.

**Closing date for receipt of applications is 5.00 pm, 7th February 2023.**

We reserve the right to readvertise or extend the closing date for this post.

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment.

National University of Ireland, Galway is an equal opportunities employer.

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