

Post Specification

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| Post Title: | Research Fellow in thermodynamic modelling (PDRA3) |
| Post Status: | Specific Purpose Contract – Full-time. |
| Research Group / Department / School: | Department of Geology, Trinity College Dublin, the University of Dublin |
| Location: | Museum building, Trinity College Dublin, the University of Dublin College Green, Dublin 2, Ireland |
| Reports to: | Dr Emma Tomlinson |
| Salary: | Appointment will be made on the Irish Universities Association Post-Doctoral pay scale, at a point in line with Government Pay Policy [€42,053 to €47,104 per annum], appointment will be made no higher than point 5. |
| Hours of Work: | Full time (40 hrs per week). |
| Closing Date: | 12 Noon (GMT), Wednesday 31 st May 2023 but late applications will be considered until the position is filled. |

Post Summary

A 3-year position is available in Trinity College Dublin, Ireland, for a talented and highly motivated postdoctoral researcher to conduct research in the area of thermodynamic modelling of mantle peridotite. The project is part of an ERC funded project LITHO3, quantifying the formation and evolution of the cratonic lithosphere. This project is led by Dr Emma Tomlinson and involves collaboration with Dr Eleanor Green, University of Melbourne, Australia.

The successful candidate will undertake refinement of existing thermodynamic equations of state (EOS) for minerals and silicate melt, and will work to extend their application from 6GPa to the transition zone using experimental data collected by LITHO3 PDRA2. These EOS will be used to investigate komatiite melt generation and reactive transport during komatiite ascent. In addition, the PDRA will investigate developing a multiple reaction thermobarometer approach for garnet-free mantle peridotite allowing thermobarometry of the shallower parts

of the lithosphere. The work involves at least one extended visit to the University of Melbourne for training and collaboration.

The position is funded for 3 years, the successful candidate would ideally take up the position in late summer 2023. The postdoctoral researcher will form part of an enthusiastic team of PhD students, postdoctoral researchers and a research associate and PI. They will participate in regular group meetings (LITHO3 and the Irish Mantle Group) and have the opportunity to attend major international conferences.

Standard Duties and Responsibilities of the Post

- Compile and select thermodynamic parameters for new mineral end members.
- Calibrate and refine activity-composition models using experimental data.
- Work with PDRA2 to investigate mantle melting and komatiite genesis at high pressure.
- Contribute to the development of undergraduate and graduate students through supervision.
- Disseminate results at international conferences and journals in collaboration with LITHO3 team members.

Funding Information

The LITHO3 project is funded by a 5-year ERC-CoG grant to Dr Emma Tomlinson.

Person Specification

Qualifications

The candidate must have obtained PhD in petrology, mineral physics or a related discipline at the time of appointment. A background in thermodynamics and/or experimental petrology is an advantage. An aptitude for developing algorithms would be a strong advantage, but candidates with no prior programming experience will be considered if they can demonstrate confidence with numerical methods and an enthusiasm to learn.

Knowledge & Experience (Essential & Desirable)

- Knowledge of mantle petrology (preferred)
- Experience with petrological modelling tools such as THERMOCALC, MAGEMin, PerpleX and Theriak-Domino (essential)
- Familiar with data fitting methods (preferred)
- Experience presenting results of research in written and oral format (essential).

Skills & Competencies

- Evidence of productivity through research outputs and peer reviewed scientific publications.
- Evidence of computational and numeracy skills
- Prior success working in a team and/or with collaborators.
- Interest in mentoring undergraduate and graduate students.

Application Procedure

Applicants should submit the following documents to Dr Emma Tomlinson (tomlinse@tcd.ie):

- A cover letter (max 1 page)
- A statement of purpose and motivation for pursuing this research (1-2 pages).
- A full Curriculum Vitae to include the names and contact details of 2 referees (including institutional email addresses).
- Evidence of English language proficiency (if required, see www.tcd.ie/study/apply/admission-requirements/postgraduate/)

The applications are required to be submitted as one e-mail with all the requested documents attached in PDF format to the Email Address: tomlinse@tcd.ie Please quote the following in the subject heading of the emailed application: “Application for Postdoctoral Fellow (LITHO3 – PDRA3)”. Interviews will be held online.

Further Information for Applicants

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| URL Link to PI | https://www.tcd.ie/Geology/people/tomlinson/ |
| URL Link to department | https://www.tcd.ie/Geology/ |
| Informal enquiries | Dr Emma Tomlinson (tomlinse@tcd.ie) |

Trinity College Dublin, the University of Dublin

Trinity is Ireland's leading university and is ranked 108th in the world (QS World University Rankings 2020). Founded in 1592, the University is steeped in history with a reputation for excellence in education, research and innovation.

Located on an iconic campus in the heart of Dublin's city centre, Trinity has 18,000 undergraduate and postgraduate students across our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences.

Trinity is ranked as the 17th most international university in the world (Times Higher Education Rankings 2020) and has students and staff from over 120 countries.

The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success. Trinity has developed 19 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. Trinity is also home to 5 leading flagship research institutes:

- Trinity Biomedical Sciences Institute (TBSI)
- Trinity College Institute of Neuroscience (TCIN)
- Trinity Translational Medical Institute (TTMI)
- Trinity Long Room Hub Arts and Humanities Research Institute (TLRH)
- Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)

Trinity is the top-ranked European university for producing entrepreneurs for the past five successive years and Europe's only representative in the world's top-50 universities (Pitchbook Universities Report).

Trinity is home to the famous Old Library and to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps and early printed material. The Trinity Library is a legal deposit library, granting the University the right to claim a copy of

every book published in Ireland and the UK. At present, the Library's holdings span approximately 6.5 million printed items, 400,000 e-books and 150,000 e-journals.

With over 120,000 alumni, Trinity's tradition of independent intellectual inquiry has produced some of the world's finest, most original minds including the writers Oscar Wilde and Samuel Beckett (Nobel laureates), the mathematician William Rowan Hamilton and the physicist Ernest Walton (Nobel laureate), the political thinker Edmund Burke, and the former President of Ireland Mary Robinson. This tradition finds expression today in a campus culture of scholarship, innovation, creativity, entrepreneurship and dedication to societal reform.

Rankings

Trinity is the top ranked university in Ireland and ranked 108th in the world (QS World University Rankings 2020). Trinity ranks in the top 50 in the world on 6 subjects and in the top 100 in 20 subjects (QS World University Rankings by Subject 2019). Full details are available at: www.tcd.ie/research/about/rankings.

The Selection Process in Trinity

The Selection Committee (Interview Panel) may include members of the Academic and Administrative community together with External Assessor(s) who are expert in the area. Applications will be acknowledged by email. If you do not receive confirmation of receipt within 1 day of submitting your application online, please contact the named Recruitment Partner on the job specification immediately and prior to the closing date/time.

Given the degree of co-ordination and planning to have a Selection Committee available on the specified date, the University regrets that it may not be in a position to offer alternate selection dates. Where candidates are unavailable, reserves may be drawn from a shortlist. Outcomes of interviews are notified in writing to candidates and are issued no later than 5 working days following the selection day.

In some instances the Selection Committee may avail of telephone or video conferencing. The University's selection methods may consist of any or all of the following: Interviews, Presentations, Psychometric Testing, References and Situational Exercises.

It is the policy of the University to conduct pre-employment medical screening/full pre-employment medicals. Information supplied by candidates in their application (Cover Letter and CV) will be used to shortlist for interview.

Applications from non-EEA citizens are welcomed. However, eligibility is determined by the Department of Business, Enterprise and Innovation and further information on the Highly Skills Eligible Occupations List is set out in Schedule 3 of the Regulations <https://dbei.gov.ie/en/What-We-Do/Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Highly-Skilled-Eligible-Occupations-List/> and the Ineligible Categories of Employment are set out in Schedule 4 of the Regulations <https://dbei.gov.ie/en/What-We-Do/Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Ineligible-Categories-of-Employment/> . Non-EEA candidates should note that the onus is on them to secure a visa to travel to Ireland prior to interview. Non-EEA candidates should also be aware that even if successful at interview, an appointment to the post is contingent on the securing of an employment permit.

Equal Opportunities Policy

Trinity is an equal opportunities employer and is committed to employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community. On that basis we encourage and welcome talented people from all backgrounds to join our staff community. Trinity's Diversity Statement can be viewed in full at <https://www.tcd.ie/diversity-inclusion/diversity-statement>.

Pension Entitlements

This is a pensionable position and the provisions of the Public Service Superannuation (Miscellaneous Provisions) Act 2004 will apply in relation to retirement age for pension purposes. Details of the relevant Pension Scheme will be provided to the successful applicant.

Applicants should note that they will be required to complete a Pre-Employment Declaration to confirm whether or not they have previously availed of an Irish Public Service Scheme of incentivised early retirement or enhanced redundancy payment. Applicants will also be required to declare any entitlements to a Public Service pension benefit (in payment or preserved) from any other Irish Public Service employment.

Applicants formerly employed by the Irish Public Service that may previously have availed of an Irish Public Service Scheme of Incentivised early retirement or enhanced redundancy payment should ensure that they are not precluded from re-engagement in the Irish Public Service under the terms of such Schemes. Such queries should be directed to an applicant's former Irish Public Service Employer in the first instance.

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Dr Emma Tomlinson

tomlinse@tcd.ie

