The Paul Scherrer Institute PSI is the largest research centre for natural and engineering sciences within Switzerland. We perform cutting-edge research in the fields of matter and materials, energy and environment and human health. By performing fundamental and applied research, we work on sustainable solutions for major challenges facing society, science and economy. PSI is committed to the training of future generations. Therefore about one quarter of our staff are post-docs, post-graduates or apprentices. Altogether PSI employs 1900 people.

NobleChem® is a technology to mitigate stress corrosion cracking in boiling water reactors through injection of hydrogen and very dilute aqueous noble metal (Pt, Rh) compound solutions into the feedwater. The noble metal compounds quickly decompose and deposit as very fine nm-sized metallic particles on all water-wetted surfaces, acting as electrocatalysts for the recombination of the oxidants with hydrogen to water. Within our NORA project, the Pt deposition and distribution behaviour is characterised by high-temperature water autoclave experiments and by using samples from a Swiss boiling water reactor. For strengthening this research activity and the support of scientific services in this field we are looking for a young Scientist

**Characterisation of the noble metal deposition behaviour in boiling water reactors**

**Your tasks**

- Performance & management of small industry service projects in this field
- Experimental evaluation of the Pt deposition behaviour in flat and pre-cracked specimens and on a simulated fuel element in autoclave experiments at PSI and by specimens exposed in boiling water reactors
- Evaluation of the effect of flow rate on the Pt deposition behaviour
- Elaboration of a mechanistic interpretation of the Pt deposition process based on a literature survey. Definition of critical experiments for its validation
- Supervision of master students & internships
- Publication of the results in scientific journals and at international conferences

**Your profile**

You hold a PhD in material science or chemistry and have experience in project management. Excellent knowledge in corrosion, electrochemistry and physical chemistry is essential. Practical experience with high-temperature water loop systems and in material characterisation and chemical analytics is also required. You are a team player with good communication skills in English. A working knowledge of German and experience in working in controlled zones (C-labs & hotlab) would be of great advantage.

**We offer**

Our institution is based on an interdisciplinary, innovative and dynamic collaboration. You will profit from a systematic training on the job, in addition to personal development possibilities and our pronounced vocational training culture. If you wish to optimally combine work and family life or other personal interests, we are able to support you with our modern employment conditions and the on-site infrastructure.

Your employment contract is limited to 3 years.

For further information please contact Stefan Ritter, phone +41 56 310 29 83.

Please submit your application online (including list of publications and addresses of referees) for the position as a
Scientist (index no. 4603-00).

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