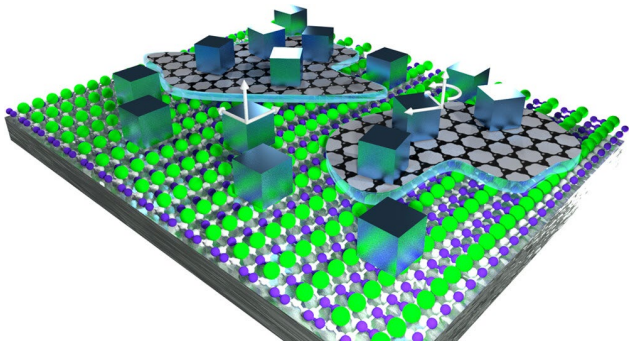
Senior Researcher / Postdoctoral Fellow Position in Thin-Film Perovskite Dielectrics (PFANDL Project)

Location: Advanced Materials Department, Jožef Stefan Institute
Start Date: June 1st, 2025
Duration: 2 years, with possible extension
Application Deadline: May 5th, 2025



Join Our Team!

We are seeking an outstanding Senior Researcher or Postdoctoral Fellow to join our dynamic team in the framework of the PFANDL project — a cutting-edge, multi-institutional collaboration focused on the design and characterization of lead-free perovskite thin films for advanced dielectric applications.

About the PFANDL Project

PFANDL (Perovskite films for antiferroelectric next-generation dielectrics) tackles the critical scientific challenge of inducing antiferroelectric (AFE) behavior in lead-free perovskite thin films — a key step toward sustainable, high-performance dielectric materials. The project combines state-of-the-art experimental techniques and multi-scale theoretical modeling to understand how structural properties such as strain, clamping, thickness, and microstructure influence the electrical behavior of thin films.
Our consortium includes expert teams from Austria, Czech Republic, and Slovenia, with complementary strengths in first-principles simulations, phase-field modeling, and experimental synthesis/characterization.

Your Role

You will play a central experimental role in our team's contribution to PFANDL, with responsibilities including:
- Synthesis of lead-free, niobium-based perovskite thin films using Pulsed Laser Deposition (PLD).
- Engineering thin films with varying levels of strain and clamping, including "declamped" growth strategies such as remote epitaxy and van der Waals-assisted deposition.
- Structural and electrical characterization of films across length scales using different techniques.
- Close collaboration with theoretical partners to validate and guide modeling efforts.

What We're Looking For

- A PhD in Materials Science, Solid State Physics, Physical Chemistry, or a related discipline.
- Strong hands-on experience with PLD or other thin-film deposition methods.
- Familiarity with dielectric, ferroelectric, or antiferroelectric materials is highly desirable.
- Skills in thin-film characterization techniques.
- A collaborative mindset and eagerness to work across disciplines and borders.

Why Join Us?

- Be part of an internationally recognized research consortium driving innovation in sustainable energy storage .
- Access to cutting-edge lab facilities and a vibrant academic environment.
- Opportunities for publishing in high-impact journals and presenting at leading conferences.
- Supportive team culture and mentorship for career development.

How to Apply

Please send your CV, motivation letter, and contact details for two referees by the deadline to matjaz.spreitzer@ijs.si. For inquiries, contact prof. Matjaž Spreitzer, Advanced Materials Department, Jožef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia (matjaz.spreitzer@ijs.si) or visit www-k9.ijs.si/en.