NEWSLETTER

INDUSTRY SECTOR



Industry Day 2026
Connecting research and industry

On 24 September 2026, Industry Day co-hosted by the SWEB team took place at the Institute of Solid State Physics, University of Latvia, bringing together researchers and industry representatives.

As one of SWEB's key annual events, Industry Day provides a platform to present current research developments, exchange perspectives with industry and explore pathways from scientific results towards practical implementation.

The SWEB programme featured **Dr. Smagul Karazhanov, Dr. Boriss Poļakovs, Dr. Andris Voitkāns** (Chief Scientist at GroGlass), and **Dr. Mārtiņš Zubkins**, covering smart functional coatings, additive manufacturing, commercialisation of functional glass coatings and photochromic thin films for smart-window applications.

The session was chaired by **Prof. Dr. Juris Purāns**, SWEB Project Manager and Head of the Thin Films Laboratory.

An important part of the programme was the dialogue between researchers and industry representatives, with discussions focusing on practical implementation, market needs and future cooperation. The programme concluded with a visit to the Thin Films Laboratory, where participants explored Roll-to-Roll deposition capabilities and scalable approaches to thin-film manufacturing.







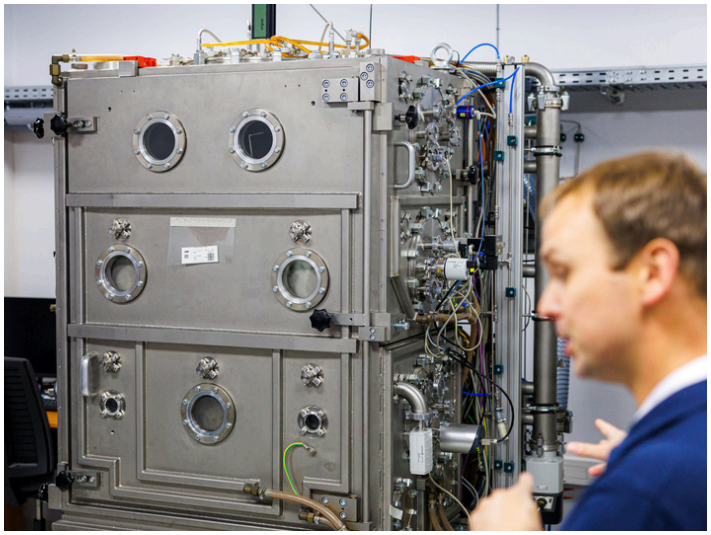


Funded by the European Union

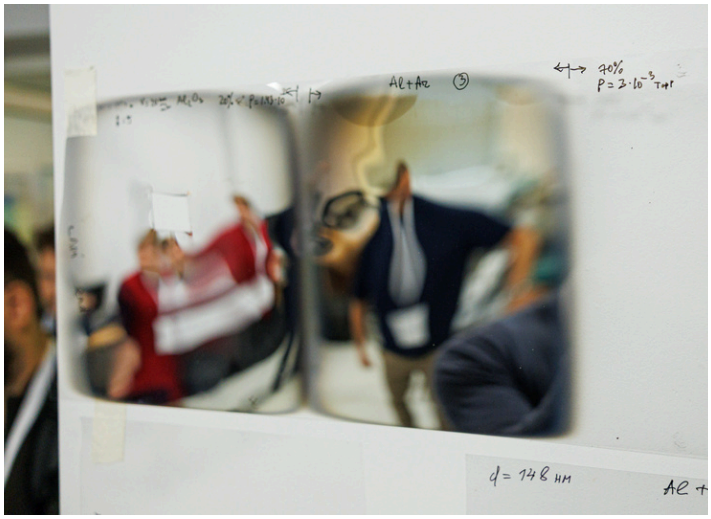
SWEB
Smart Windows for Zero Energy Buildings

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INDUSTRY & TECHNOLOGY TRANSFER







Roll-to-Roll: expanding the path from research to application

The reactive sputtering Roll-to-Roll (R2R) deposition system, launched within the SWEB project, allows the Thin Films Laboratory to scale thin-film deposition from small laboratory samples to continuous, industrial-scale processes. The system features a wide rotating drum heated up to 350 °C, adjustable web speed and tension control, and four magnetrons with four process gases. ISSP UL is the only research centre in the Baltic States operating this technology.

R2R in the SmartPV project

The Thin Films Laboratory has joined the international SmartPV project as a subcontractor, producing photochromic coatings with the R2R system. Funded by the Clean Energy Transition Partnership (CETPartnership) and coordinated by Uppsala University, SmartPV brings together RISE, KTH and CIEMAT to develop semi-transparent, light-adaptive photovoltaic glazing that generates electricity while dynamically controlling light transmission.

From laboratory capability to international project application

The laboratory produces photochromic yttrium oxyhydride (YHO) coatings on PET films 20 cm wide, with lengths from 20 cm upwards as required. The coatings form part of the planned prototype, an energy-efficient solar window, and are sent to CIEMAT in Spain for climatic testing. YHO coatings are also deposited on samples prepared by Uppsala University.

The laboratory contributes to several of the project's work packages, turning the R2R capability developed within SWEB into a service for international research partners.

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RESEARCH & OUTREACH



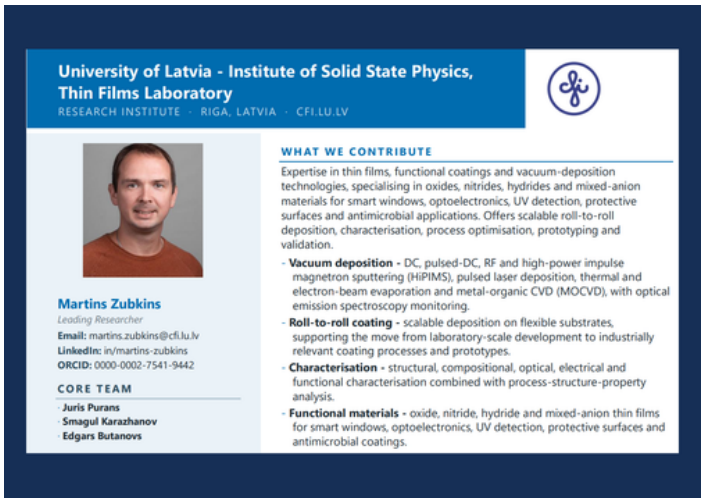
Two new publications on smart window materials

In October, the SWEB team published two new articles. In Journal of Alloys and Compounds, **Dr. Boriss Poļakovs** and colleagues show how rhenium doping lowers the transition temperature of thermochromic VO_2, a step towards coatings that automatically regulate solar heat entering buildings. In Surface & Coatings Technology (ICTF 2026 special issue), **Dr. Mārtiņš Zubkins** and partners from the University of Tartu and the Helsinki Accelerator Laboratory identify composition as the main driver of the photochromic response in yttrium oxyhydride films.



SWEB at European Researchers' Night 2026

On 25 September, around 1,000 visitors came to ISSP UL for European Researchers' Night under the theme "Between Molecules and Colours".
Dr. Mārtiņš Zubkins demonstrated photochromic thin films that darken in light and return to transparency afterwards, including R2R-produced coatings on flexible PET.
Visitors could see how these materials work, ask questions and learn how smart window research can contribute to more energy-efficient buildings.



Featured in the Latvian R&I Partner Catalogue 2026

The Thin Films Laboratory, home to the SWEB research team, is featured in the Latvian Research & Innovation Partner Catalogue 2026, prepared by the Latvian Council of Science's Horizon Europe National Contact Point. The catalogue presents 120 Latvian research teams to help international partners and industry find new collaborators. Represented by **Dr. Mārtiņš Zubkins**, Leading Researcher, the laboratory's profile highlights its expertise in thin-film deposition, materials characterisation and scalable roll-to-roll coating technologies. The team is open to new international partnerships, joint experiments and Horizon Europe projects.

Funded by the European Union