

ALD FOR INDUSTRY



Workshop, Tutorial & Industrial Exhibition

March 11 – 12, 2025 | Dresden, Germany

# ALD for Industry 2025

The 8th International Conference “**ALD FOR INDUSTRY**” will again bridge the gap between fundamental science, industrialization and commercialization of this technology. Atomic layer deposition (ALD) is a process for depositing a variety of thin film materials from the vapor phase of matter. The growth of this technology is not only based in microelectronics applications, but also in areas of industrial Li-Ion batteries, photovoltaics, optics, light, biomedicine and quantum technology.

This event is already established since 2017 and attracts annually more than 100 participants and numerous exhibitors to visit Dresden. The Conference with Tutorial provides the opportunity to learn more about **fundamentals of ALD technology**, to **get informed** about recent progress in the field and **to get in contact** with industrial and academic partners. Increase your visibility and present your company in our accompanying exhibition.

## PROGRAM COMMITTEE

- **Sean Barry**, Carleton University, Canada
- **Gloria Gottardi**, Fondazione Bruno Kessler, Italy
- **Christoph Hossbach**, Applied Materials, Germany
- **Martin Knaut**, TU Dresden, Germany
- **Laura Nyns**, IMEC, Belgium
- **Fred Roozeboom**, University of Twente, The Netherlands
- **Jonas Sundqvist**, AlixLabs, Sweden

## ORGANIZER

*European Society of Thin Films*  
Gostritzer Straße 63 | 01217 Dresden | Germany  
Tel: +49 351 8718370 | [info@efds.org](mailto:info@efds.org) | [www.efds.org](http://www.efds.org)

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# Program

*Subject to change without notice*

## Tuesday, March 11, 2025

08:00 | *Registration & Exhibition Construction*

**10:00 | Opening**

### TUTORIALS

10:10 | Tut01

**Fundamentals of atomic layer deposition: a tutorial**

Riikka Puurunen, Aalto University, Finland

10:30 | Tut02

**Structure-Function Relationships in Precursor Design: Bridging Fundamental Insights with Practical Applications**

Sean Barry, Carleton University, Canada

10:50 | Tut03

**High quality dielectric nitride films by PEALD for next generation GaN devices**

Michael Powell, Oxford Instruments Plasma Technology, UK

11:10 | Discussion

11:30 | KN0100

**Past, present and future of ALD from an industrial perspective**

Jan Willem Maes, ASM Belgium

12:00 | *Lunch Break*

### SESSION 1 | Perspectives on ALD Industry

13:00 | OR0101

**Talk on Market Trends in materials, process and equipment**

Jonas Sundqvist, AlixLabs AB, Sweden

13:10 | OR0102

**ALD for Memory Applications: a matter of details**

Laura Nyns, IMEC, Belgium

13:30 | OR0103

**Challenges and Solutions in ALD of Thermal Budget Sensitive Ferroelectric Materials**

Bart Vermeulen, Ferroelectric Memory Co GmbH, Germany

**13:50 | Poster Session (page 5)**

14:20 | OR0104

**APECS – Pilotline: Advanced Packaging and Heterogeneous Integration for Electronic Components and Systems**

Wenke Weinreich, Fraunhofer IPMS, Germany

14:40 | OR0105

**ALD Inflection Points in CFET Architecture**  
Jonathan Church, Lam Research Corporation, USA

**15:00 | Industrial Pitch Session**

15:20 | *Coffee Break, Networking & Exhibition*

### SESSION 2 | Atomic Layer Etching

15:50 | OR0201

**Atomic Layer Etching – Applications & DFT Simulation**

Joaquin Miranda, SAL - Silicon Austria Labs, Austria

16:10 | OR0202

**Cryo-Atomic Layer Etching of Si, SiO<sub>2</sub> and Si<sub>3</sub>N<sub>4</sub>**

Rémi Dussart, Université d'Orléans, France

# Program

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## SESSION 3 | Metrology

16:30 | OR0301

### Monitoring and optimization of ALD processes with Remote Plasma Optical Emission

Eric Cox, Gencoa Ltd, UK

16:50 | OR0302

### Optimizing Plasma-Assisted Atomic Layer Deposition using Impedans Retarding Field Energy Analyzers

Angus McCarter, Impedans Ltd., UK

17:10 | OR0303

### Advanced in-situ QCM process monitoring

Martin Knaut, TU Dresden / ALS Metrology UG, Germany

17:30 *End of First Day*

## 19:00 | Get-Together @ Restaurant

**Sophienkeller** | Taschenberg 3,  
01067 Dresden | near to Semperoper,  
Zwinger and Dresden Castle

*\*\*\*In Registration Ticket included.*



## Wednesday, March 12, 2025

### 09:00 | Opening

## SESSION 4 | Emerging Applications

09:10 | KN0200

### ALD for Energy Applications - Recent Progress in Precursor Chemistry for Li-ion Batteries and H<sub>2</sub> Catalysts

Nicolas Blasco, AirLiquide, France

09:40 | OR0401

### Nanoscale solid-state lithium-ion electrolytes enabled by atomic layer deposition

Bedjaoui Messaoud, CEA Leti, France

10:00 | OR0402

### ALD for Nanoparticles: From Fundamentals to Industrial Applications

Rong Chen, University of Science and Technology HUST, China

10:20 | OR0403

### Spatial ALD of IrO<sub>2</sub> and Pt films for green H<sub>2</sub> production by PEM electrolysis

Paul Poodt, SparkNano and Eindhoven University of Technology, The Netherlands

10:40 | *Coffee Break, Networking & Exhibition*

## EXPLORE THE EXHIBITION



# Program

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## SESSION 5 | Industrialization of ALD

11:20 | OR0501

### **Recent developments and emerging applications in atmospheric-pressure ALD on high-porosity membranes**

Fred Roozeboom, University of Twente, The Netherlands

11:40 | OR0502

### **Direct Processing by $\mu$ DALP™. Precision Coatings for Next Gen Devices**

Maksym Plakhotnyuk, ATLANT 3D, Denmark

12:00 | OR0503

### **High Speed Spatial PEALD Using a Novel Precursor Separation Method**

Eric Dickey, Lotus Applied Technology, USA

12:20 | OR0504

### **Plasma-Enhanced ALD and ALE: A comprehensive analysis of plasma generation technologies and implications on processing optimization**

Wojciech Gajewski, Trumpf Hüttinger, Germany

★ 12:40 | OR0103

### **Process Optimization of ALD TiN Thin Films for Superconducting Applications Using TFS-200 Reactor**

TBA, Beneq Oy, Finland

13:00 | *Lunch Break – extended break*

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## SESSION 6 | Efficiency and Throughput Optimization

14:30 | OR0601

### **Fabrication of Surface Relief Gratings using ALD-based Technologies to Overcome the Challenges of Reactive Ion Etching of $\text{TiO}_2$**

Mathias Franz, Fraunhofer ENAS, Germany

14:50 | OR0602

### **Process Control in ALD of decorative interference coatings**

Jacques Kools, Encapsulix, France

15:10 | OR0603

### **Industrial batch ALD for optical applications**

Li Shuo, Afly Solution Oy, Finland

15:30 | OR0604

### **Introducing a Surface Acoustic Wave-Based Miniaturized Aerosol Source for Controlled Liquid Precursor Delivery in ALD Processes**

Mehrzad Roudini, Leibniz IFW, Germany

15:50 | OR0605

### **Innovative Low-Temperature Batch Atomic Layer Deposition for Optoelectronic Applications**

Christoph Hossbach, Applied Materials, Germany

16:10 | Final Remarks

**16:30 | End of Conference**



*Many thanks to the Program Committee and all authors for the preparation of the recent interesting program.*

*This event is supported by the Main Sponsor Beneq and the Platinum Sponsors EpiValence, Kurt Lesker, Lotus Applied Technology and Trumpf Hüttinger.*

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# Exhibition

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The Exhibition at the event will be open in parallel to the Workshop and the Tutorial. You can find experienced and competent partners for ALD tools, components, equipment and precursors. During the breaks you can inform yourself about new products and services.

The several breaks will give you the opportunity to speak with participants, speakers and exhibitors while having a coffee and snacks.

You will find the following exhibitors:



Open places still available!

Deadline for registration: January 31, 2025

## Poster Session

There is a lot of research and development activities around Atomic Layer Deposition and Atomic Layer Etching. You did not receive a talk? Use the chance and present a poster. This is a nice way to get in discussion with other colleagues.

A Poster Session will take place on Tuesday, March 11, 2025, at 14:30 in the afternoon. Posters will be visible over the whole event.

**PO001** | *Deposition of High-Quality Aluminium Fluoride Layers through Optimization of a PEALD Process using  $Al(CH_3)_3$  and  $SF_6$*  | Fabian Steger, RhySearch, Buchs, Austria

**PO002** | *Evaluating the Enhanced Fire Resistance of Polyamide Fabric through Dual-Layer Treatment with ALD-ZnO and DOPO-Based Silane* | Sebastian Lehmann, Leibniz IFW, Germany

**PO003** | *Improving atomic layer deposition process of silicon oxide ( $SiO_2$ ) and aluminum oxide ( $Al_2O_3$ )* | Long Lei, Fraunhofer IMPS, Germany

**PO004** | *Thin Film Characterization with Laser Ultrasonics* | Mike Hettich, Research Center for Non-Destructive Testing GmbH, Austria

**PO005** | *Surface and Interface modifications for thermoelectric materials using Atomic Layer Deposition (ALD)* | Amin Bahrami, Leibniz IFW, Germany

**PO006** | *Catalyzed Atomic Layer Deposition for Conformal Depositions in HAR Structures* | Tyler Myers, Forge Nano, USA

**PO007** | *Fast and precise mechanical characterization of ultra-thin films using fully integrated laser-induced surface acoustic wave spectroscopy (LAWave)* | Martin Zawischa, Fraunhofer IWS, Germany

There is place for more! 😊

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# Registration

[Link to Registration](#)

## Conference Tickets

## Price\*

Standard ticket | early bird

830 EUR

Standard ticket | after January 31, 2025

930 EUR

Student ticket / Student Poster

420 EUR

Poster Presenters

730 EUR

The registration fee includes the participation of the chosen event, conference booklet, coffee and lunch breaks as well as the Get-Together.

\*Workshop fees are free of VAT according to §4 (22a) UStG (German value-added tax law)

Exhibition & Sponsoring	Gold Sponsor	Platinum Sponsor
Logo @ event website	X	X
Logo @ front page of printed program booklet		X
Advertisement in the printed program booklet	Half page	Full page
1 table in the exhibition	X	X
1 person free of charge	X	X
A presentation slot (10 min advertisement or 20 min expert presentation)		X
	2.200 EUR**	2.700 EUR**

Your chance to present your products and services to the community of Atomic Layer Deposition and their applications. \*\*All prices for sponsors are exclusive VAT.

The general terms and conditions of sale of EFDS apply ([www.efds.org/en/agb](http://www.efds.org/en/agb)).  
Cancellations must be made in written form.

# Travelling

## Event Location

### Penck Hotel Dresden

Ostra-Allee 33, 01067 Dresden

E-Mail: [hello@penckhotel.de](mailto:hello@penckhotel.de)

Phone: +49 351 492 27 85

<https://www.penckhoteldresden.de/>

## Hotel Recommendations

### Penck Hotel Dresden\* Event Location

Booking link : [reservierung@penckhotel.de](mailto:reservierung@penckhotel.de)

Stichwort : ALD Workshop EFDS

Guestroom: Overnight stay incl. breakfast

**Single 104,00 € | Double occupancy 129,00 €**

Payment method : Self-pay on site

Contingent availability: until February 11, 2025

### Hilton Dresden, An der Frauenkirche 5, 01067 Dresden

t: +49 351 8642 756, f: +49 351 8642 129, [dresden.hilton.com](https://www.hilton.com)

Booking link : <https://group.hilton.com/hsqe9t>

Keyword : ALD 2025

Guestroom: Overnight stay incl. breakfast

**Single 119,00 € | Double occupancy 144,00 €**

Payment method : Self-pay on site

Contingent availability: until January 27, 2025

### Holiday Inn Dresden – Am Zwinger | Ostra-Allee 25, 01067

Dresden | <https://www.ihg.com/holidayinn/hotels/>

Booking link : <https://holidayinndresden.guestreservations.com/>

Keyword : ALD 2025

Guestroom: Overnight stay incl. breakfast

**Single 101,00 € | Double occupancy 120,00 €**

Payment method : Self-pay on site

Contingent availability: until February 10, 2025

