

ALD for Industry 2023

The 6th International Conference „ALD FOR INDUSTRY“ will again show the bridge between basic science, industrialisation and commercialisation of this technology. The event provides the opportunity to get in touch with industrial and academic partners, to learn more about fundamentals and potential application of ALD technology.

Atomic layer deposition (ALD) is a process used to deposit a wide 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 and quantum technology. Atomic layer deposition, is a thin film technology that enables new and highly innovative products for a wide range of applications.

The Workshop will focus on the current markets for ALD and address the applications in Semiconductor industry, MEMS & Sensors, Optics, Packaging and Photovoltaics.

PROGRAM COMMITTEE

- Jamie Greer, Air Liquide Advanced Materials, Paris, France
- Dr. Christoph Hossbach, Picosun Oy and Picosun Europe GmbH, Dresden, Germany
- Dr. Martin Knaut, IHM, TU Dresden, Germany
- Prof. Mikko Ritala, University of Helsinki, Helsinki, Finland
- Jonas Sundqvist, AlixLabs AB / TECHCET LLC CA, Lund, Sweden
- Dr. Claudia Wiemer, CNR IMM, Unit of Agrate Brianza, Italy

Event Location

Penck Hotel Dresden | Ostra-Allee 33; 01067 Dresden, Germany

Website:

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



Program

Tuesday, March 21, 2023

08:00 | Registration for Exhibitors

09:00 | Registration for Participants

10:00 | Opening of the Tutorial

10:10 | Tut01

From Fundamentals to Industrial Application: The various Shades of Precursor Chemistry

David Zanders, Ruhr University
Bochum, Bochum, Germany

10:30 | Tut02

ALD process development, monitoring and control

Martin Knaut, IHM, Technical University
Dresden, Germany

10:50 | Questions

11:00 | Coffee Break & Opening of the Exhibition

11:30 | Tut03

EUV Lithography patterning: status and challenges towards the device nano scaling

Danilo De Simone, IMEC, Leuven,
Belgium

11:50 | Tut04

Atomic Layer Processing of Hafnia-Zirconia Ferroelectrics

Uwe Schröder, NaMLab gGmbH,
Dresden, Germany

12:10 | Tut05

ALD within polymers- hybrid materials and nanostructure fabrication

Tamar Segal-Peretz, Technion-Israel
Institute of Technology, Haifa, Israel

13:00 | Lunch Break

14:00 | Opening of the Workshop

14:10 | WS01

Market overview and trends of ALD and ALE in the semiconductor industry

Jonas Sundqvist, AlixLabs AB /
TEHCET LLC CA, Lund, Sweden

14:40 | WS02

The right ligand with the right metal for selective deposition, etch or inhibition

Simon Elliott, Schrödinger, New York,
USA

15:00 | WS03

Introduction of Merck Electronics KGaA and an exemplary inhouse ALD study

Lukas Mai, Merck Electronics KGaA,
Darmstadt, Germany

15:20 | Presentation of Dockweiler
Chemicals

15:30 | Coffee Break & Exhibition

16:30 | WS04

ALE (Atomic Layer Etch) and PEALD (Plasma Enhanced Atomic Layer Deposition) in one Chamber (FALP) with high throughput

Stephan Wege, plasway-Technologies
GmbH, Bannewitz-Cunnersdorf,
Germany

Program

16:50 | WS05

In-situ gas monitoring of ALD processes using remote optical emission spectroscopy

Florian Meyer, Gencoa, Liverpool, United Kingdom; Carlos Guerra, Swiss Cluster, Thun, Switzerland

17:10 | WS06

Fighting ALD's biggest demons: reducing CoO and process time, one batch at a time

Christoph Hossbach, Picosun, Dresden, Germany

17:30 | WS07

Low temperature PEALD: Analysis to high throughput industrial applications

Vivek Beladiya, Plasma Electronic GmbH, Neuenburg am Rhein, Germany

17:50 | Discussion

18:00 | End of the First Day

19:00 Dinner @ Restaurant **Italienisches Dörfchen** near to Semperoper, Zwinger and Dresden Castle

Theaterplatz 3
01067 Dresden



Wednesday, March 22, 2023

09:00 | Opening of DAY 2

09:00 | WS08

Group III-Nitride semiconductor materials made by low temperature plasma based Atomic Layer Deposition

Noureddine Adjeroud, Luxembourg Institute of Science and Technology, Esch-sur-Alzette, Luxembourg

09:20 | WS09

Remote plasma ALD and ALE for power electronics

Michael Powell, Oxford Instruments Plasma Technology, Bristol, United Kingdom

09:40 | WS10

Superconducting NbN layers deposited by PEALD

Jakob Zessin, SENTECH Instruments GmbH, Berlin, Germany

10:00 | WS11

COCOS measurements on silicon oxides, deposited by SAM24 and O₂ plasma / ozone

Henry Bernhardt, Arne Ohlsen, Infineon Technologies AG, Dresden, Germany

10:30 | Coffee Break & Exhibition

11:00 | WS12

Flash Lamp Enabled Atomic Layer Deposition

Yuanhe Cui, Technische Universität Dresden, Dresden, Germany

Program

11:20 | WS13

From planar to 3D-objects ALD – Innovative Solutions for Sustainable Applications

Sebastian Lehmann, Leibniz-Institut für Festkörper- und Werkstofforschung Dresden, Dresden, Germany

11:40 | WS14

Atomic Layer Deposition of Cobalt films on a scia AtoI 200

Mathias Franz, Fraunhofer ENAS, Marcus Daniel, scia Systems GmbH, Chemnitz, Germany

12:00 | Lunch Break

13:00 | WS15

A Multi-Technology Approach for Advanced Device Applications

Ganesh Sundaram, Veeco, Waltham, USA

13:20 | WS16

Sequential Infiltration Synthesis for Organized Nanostructure Fabrication

Gabriele Seguini, CNR IMM, Agrate Brianza, Italy

13:40 | WS17

Recent Development of Largescale ALD for PV Industrial Applications

Wei-Min Li, Jiangsu Leadmicro Nano Technology Co. Ltd., Jiangsu, China

14:00 | WS18

Atomic layer deposition for halide perovskite solar cells

Marianna Kemell, University of Helsinki, Helsinki, Finland

14:20 | Coffee Break & Exhibition

15:00 | WS19

Development of volatile Y2O3 and HF-free YF3 ALD precursors for advanced F-radicals corrosion protective coatings

Nicolas Blasco, AirLiquide, Grenoble, France

15:20 | WS20

ALD Metal-Dielectric Heterostructures down to Atomic Scale

Adriana Szeghalmi, Fraunhofer IOF, Jena, Germany

15:40 | WS21

Synthesis of photocatalytic nanocomposites by low-temperature ALD for water remediation

Giuliana Impellizzeri, Italian National Research Council (CNR) – Institute for Microelectronics and Microsystems (IMM), Catania, Italy

16:00 | **OPEN DISCUSSION**

The topic will be announced and selected according to the interests of the participants at the event.

16:30 | Final Remarks

16:40 | End of the Event

Please, register online for the event:

<https://efds.org/en/event/international-conference-ald-for-industry/>

Many thanks to the Program Committee and all authors for the preparation of the recent interesting program. We are looking forward to seeing all in Dresden.

Exhibition

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:



Travelling

Event Location

Penck Hotel Dresden
Ostra-Allee 33, 01067 Dresden
E-Mail: hello@penckhotel.de
Phone: +49 351 492 27 85
<https://www.penckhoteldresden.de/>

Hotel recommendations

- *Penck Hotel Dresden* Event Location*
Ostra-Allee 33, 01067 Dresden
<https://www.penckhoteldresden.de/>
- *Leonardo Hotel Dresden Altstadt*
Magdeburger Str. 1A, 01067 Dresden
<https://www.leonardo-hotels.de/>
- *Maritim Hotel Dresden*
Devrientstraße 10-12, 01067 Dresden
<https://www.maritim.de/>
- *Hotel Motel One*
Postpl. 5, 01067 Dresden
<https://www.motel-one.com/>

Organizer

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