

Colloquium on

Aerosol Process Design for Biomedics, Catalysts, Food and Gas Sensors

by the

Particle Technology Laboratory, Institute of Energy & Process Engineering,
Department of Mechanical & Process Engineering, ETH Zürich, Switzerland

Wednesday, 26.02.2025 @ HG D16.2 ETH Zürich

8 – 8:55 Registration + April 28, 1999 Opening Lecture [Nanoparticles: Flame synthesis and applications](https://video.ethz.ch/speakers/lecture/44b5cc96-59c4-4184-a3f4-35c1bc6e03cf.html?autoplay=true) by S.E. Pratsinis, <https://video.ethz.ch/speakers/lecture/44b5cc96-59c4-4184-a3f4-35c1bc6e03cf.html?autoplay=true> (54 min)

8:55 – 9:00 Welcome by Prof. Andreas Güntner, Inge Herrmann and Sotiris E. Pratsinis

Aerosol Synthesis & Catalysis

Prof. Markus Winterer, Univ. of Duisburg and Prof. Way Yang Teoh, Univ. of Malaysia

- 9:00 - 9:15 Give it away to keep it, Prof. Lutz Mädler, University of Bremen, Germany
9:15 - 9:20 Q & A
9:20 - 9:35 The (real) challenges of flame spray synthesis, Dr. Karsten Wegner, Parteq GmbH, Kuppenheim, Germany
9:35 - 9:40 Q & A
9:40 - 9:55 Flames, Operando Spectroscopy, Catalysis and Energy Storage – a fascinating playground, Prof. Jan-Dierk Grunwaldt, Karlsruhe Institute of Technology, Germany
9:55 - 10:00 Q & A
10:00 - 10:15 Highly-Loaded Metal Catalysts for CO₂ Hydrogenation, Prof. Kakeru Fujiwara, Kanazawa University, Japan
10:15 - 10:20 Q & A
10:20 - 10:35 DNA-loaded colloids are the ultimate tracing particles, Prof. Robert Grass, Functional Materials Laboratory, ETH Zurich
10:35 - 10:40 Q & A
10:40 - 11:10 Coffee/Tea & Croissant break with discussion

Process Design

Dr. Max Eggersdorfer, Novartis SA, Basel & Prof. Vlasios Mavrantzas, Univ. Patras, Greece

- 11:10 - 11:25 Security of Generative Artificial Intelligence, Dr. Beat Büsser, IBM Zurich
11:25 - 11:30 Q & A
11:30 - 11:45 Nucleation of carbonaceous nanoparticles, Prof. Eirini Goudeli, The University of Melbourne, Australia
11:45 - 11:50 Q & A
11:50 - 12:05 Building Robust and Collaborative Coded, Engineering Models, Prof. J.D. Landgrebe, Data Delve LLC, Cincinnati, OH and University of Delaware, USA
12:05 - 12:10 Q & A
12:10 - 1:10 Standing Lunch with discussion

Biomedics

Dr. Fabian Starsich, Gericke Group & Dr. Björn Schimöller, Iuvantium Ltd.

- 1:10 - 1:25 From flame-made particles to pharmaceuticals, Dr. Max Eggersdorfer & Dr. Hendrik Kammler, Novartis SA, Basel, Switzerland
- 1:25 - 1:30 Q & A
- 1:30 - 1:45 Bridging the Gap: Enhancing Clinical Translation of Oral Nanomedicines Prof. Alexandra Teleki, Uppsala University, Uppsala, Sweden
- 1:45 - 1:50 Q & A
- 1:50 - 2:05 Innovating medical materials, Prof. Inge Herrmann, University Hospital Balgrist, Zurich, EMPA Dübendorf & ETH Zürich, Switzerland
- 2:05 - 2:10 Q & A
- 2:10 - 2:25 Flame-made fractal-like nanoaggregates in biomedicine, Prof. Georgios Sotiriou, Karolinska Institutet and Stockholm University, Stockholm, Sweden
- 2:25 - 2:30 Q & A
- 2:30 - 2:50 Coffee/Tea, Fruit & Desert break with discussion

Sustainable Food, Gas Sensors and Carbonaceous Deposits

Dr. Oliver Bischof, TSI Inc. and Prof. George Kelesidis, TU Delft, Netherlands

- 2:50 - 3:05 Sustainable Nanotechnology: *From designing safer and sustainable nanoparticles to making food in the outer space*, Prof. Phil Demokritou, Rutgers University, Piscataway, NJ and Harvard School of Public Health, Boston, MA, USA
- 3:05 - 3:10 Q & A
- 3:10 - 3:25 The Gas Sensing Odyssey: from Lab to Market, Dr. Jan van den Broek, Alivion AG, Zurich
- 3:25 - 3:30 Q & A
- 3:30 - 3:45 Molecular sensors from flame aerosol-derived nanoparticles, Prof. Andreas Güntner, ETH Zürich
- 3:45 - 3:50 Q & A
- 3:50 - 4:05 Structure and Reactivity of Combustion Engine Aggregates and their Deposits, Prof. Athanasios G. Konstandopoulos, Aristotle University, Thessaloniki, Greece
- 4:05 - 4:10 Q & A
- 4:10 - 5:00 Closing remarks, discussion and walk to Audimax, HG F30

Final Lecture

- 5:15 - 6:15 From Aerosol Synthesis of Materials to a New Kinetic Theory of Gases? Prof. Sotiris E. Pratsinis, ETH Zürich, Audimax, HG F30
- 6:15 - 8:00 Reception, Foyer Turbinenhalle, ML Building

Topic: Colloquium on Aerosol Process Design for Biomedics, Catalysts, Food and Gas Sensors
Time: Feb 26, 2025 08:00 AM Amsterdam, Berlin, Rome, Stockholm, Vienna

Join Zoom Meeting

<https://ethz.zoom.us/j/63462561763>

Meeting ID: 634 6256 1763