**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 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. Vlasis 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 NanomedicinesProf. 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