

DRAFT Timetable

Algae Biotechnology: Techniques and opportunities for a sustainable bioeconomy



Location: Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB,
Nobelstrasse 12, 70569 Stuttgart, Germany / Building D, Floor 6, Room D6.05

| DAY 1 | Wednesday 2nd April 2025 |
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| MORNING | Modul 1: Microalgae cultivation principles Chair: Dr. Ulrike Schmid-Staiger |
| 08:45 – 09:15 | Arrival and registration |
| 09:15 – 09:25 | Welcome address/Welcome at IGB Dr. Timo Hardiman, Fraunhofer IGB, Germany |
| 09:25– 09:45 | Introduction course and team Dr. Ulrike Schmid-Staiger, Fraunhofer IGB, Germany |
| 09:45 – 10:15 | What are algae? Overview of ingredients of algae Dr. Francisca Vermeulen, SAMS, UK |
| 10:15 – 10:45 | Analytics of metabolites/ingredients. Dr. Matthew Davey, SAMS, UK |
| 10:45 – 11:00 | Coffee break |
| 11:00 – 11:30 | Overview to reactor systems. Tobias Ebbing, Fraunhofer IGB, Germany |
| 11:30 – 12:00 | Light, tailored production, biomass composition in dependence of light Konstantin Frick, Fraunhofer IGB, Germany |
| 12:00 – 12:30 | The European Algal Industry - Status & Opportunities Dr. René Groben, Mátis, Iceland |
| 12:30 – 12:45 | Wrap up and overview of afternoon activities Dr. Ulrike Schmid-Staiger, Fraunhofer IGB, Germany |
| 12:45 – 13:45 | Lunch break |

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| AFTERNOON | Activities 1.) Lab Tour: from shaking flasks to lab PBRs, process analytics at IGB 2.) Metabolite pathway analysis 3.) Heterotrophic algae production in fermenters 4.) Measuring photosynthetic activity and light stress |
| 13:45 – 14:20 | Activity 1–4 (rotation after 30 min), rotation break 5–10 min |
| 14:20 – 15:00 | Activity 1–4 (rotation after 30 min), rotation break 5–10 min |
| 15:00 – 15:15 | Coffee break |
| 15:15 – 15:55 | Activity 1–4 (rotation after 30 min), rotation break 5-10 min |
| 16:00 – 16:40 | Activity 1–4 (rotation after 30 min), rotation break 5-10 min |
| 16:40 – 17:00 | Wrap up, questions, organisation of evening activity etc. Dr. Ulrike Schmid-Staiger, Fraunhofer IGB, Germany |
| 18:30 | Joint Diner in Stuttgart City Brauhaus Schönbuch, Bolzstraße 10, 70173 Stuttgart |

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| DAY 2 | Thursday 3th April 2025 |
| MORNING | Module 2: Industrialization of algae production/Module 3: Algae in nutrition Chair: Konstantin Frick |
| 09:00 – 09:15 | Introduction to day 2 Konstantin Frick, Fraunhofer IGB, Germany |
| 09:15 – 09:45 | Sensors, monitoring and modelling of algae production in photobioreactors Yen-Cheng Yeh, Fraunhofer IGB, Germany |
| 09:45 – 10:30 | Algae in nutrition: Overview and Novel Food Regulation Konstantin Frick, Fraunhofer IGB, Germany |
| 10:30 - 11:00 | Coffee break |
| 11:00 – 11:30 | Circular economy: Where do the nutrients or CO₂ come from? Dr. Ulrike Schmid-Staiger, Fraunhofer IGB, Germany |
| 11:30 – 12:00 | Scale-up of PBRs, LEDS, principles to keep in mind Gordon Brinitzer, Fraunhofer IGB, Germany |
| 12:00 – 12:30 | Trends and applications of FPA reactors Gregor Weber, Subitec GmbH, Germany |

 All times are in Central European Time (CET).

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| 12:30 – 12:45 | Wrap up and overview of afternoon activities Konstantin Frick, Fraunhofer IGB, Germany |
| 12:45 – 13:45 | Lunch break |
| AFTERNOON | Activities 5.) Up-scaling of PBRs – Calculations (energy demand, CO ₂ demand, area needed) 6.) Overview DSP, cascaded extraction, dewatering, cell disruption, steam drying 7.) Compact modular PBR, control system and automation |
| 13:45 – 14:30 | Activity 5–7 (rotation after 45 min), rotation break 10–15 min |
| 14:30 – 15:15 | Activity 5–7 (rotation after 45 min), rotation break 10–15 min |
| 15:15 – 16:00 | Activity 5–7 (rotation after 45 min), rotation break 10–15 min |
| 16:00 – 16:15 | Coffee break |
| 16:15 – 16:45 | Test |
| 16:45 – 17:00 | Final Wrap-Up and Farewell Konstantin Frick, Fraunhofer IGB, Germany |