

# ALGÆEUROPE 2024

10-13 DECEMBER ATHENS

## Conference Day 1 - Tuesday 10 December 2024

Registration: 08:00 am - 09:00 am

### 09:00 am - 09:20 am: Conference Opening

Carlos Unamunzaga (EABA)  
Professor Fliemetakis (Agricultural University of Athens)  
Jean-Paul Cadoret (EABA)

### 09:20 am - 09:30 am: Intro Moderator Adrien Vincent

### 09:30 am - 10:00 am: Keynote Speaker

Dr Kengo Suzuki (Euglena Co. Ltd., Japan): Research and Development of Microalgae Euglena and its Social Implementation

### 10:00 am - 11:00 am: Session 1: Industry

**10:00 am - 10:10 am:** Mellissa Elliman & Lik Theng Ho (Arctic Algae AS): A new heterotrophic marine dinoflagellate (*Cryptocodinium* sp.) as a source of Phospholipid DHA for anti-inflammatory pharmaceutical drug

**10:10 am - 10:20 am:** Yann Le Gal (Veramaris): Nature's solution to enabling sustainable growth of aquaculture

**10:20 am - 10:30 am:** Hans Vaeth (Algoliner GmbH & Co. KG): Combining airlift photobioreactors with membrane technology to increase efficiency

**10:30 am - 10:40 am:** Stefan Matthes (GICON): Commercial Algae Project Solutions from a Single Source

**10:40 am - 10:50 am:** Zeenat Hussain Rupawalla (Plankton First): Evaluation of Innovative Technologies to enhance Productivity, Climate-resilience and Economic Sustainability of Microalgae-based products

**10:50 am - 11:00 am:** Joachim Grill (Carniolus d.o.o): Vertically Fully Integrated, Phototrophic Production of Algae-based Omega-3 (EPA) Replacing Fish-oil-derived Products

### 11:00 am - 11:40 am: Coffee Break

### 11:40 am - 12:45 pm: Session 2: Production

**11:40 am - 11:55 pm:** Francesca Casagli (INRIA): A breakthrough in the temperature prediction of microalgae outdoor processes

**11:55 pm - 12:10 pm:** Cintia Gomez Serrano (University of Almeria): Optimization of ulva production in raceway photobioreactors with seawater recirculation: the critical factors

**12:10 pm - 12:25 pm:** László Nemes (HUN-REN SZTAKI): Combined Digital Holographic and Multispectral Fluorescent Microscopy for Real Time Automated Algae Monitoring.

**12:25 pm - 12:35 pm:** Freddy Guihéneuf (Inalve): Innovative algal solutions for marine larvae in the aquaculture industry

**12:35 pm - 12:45 pm:** Daniel Lux (Co2Brains): Harvesting of Microalgae Blooms with Autonomous floating Drones

### 12:45 pm - 12:55 pm: SANI Membranes - Sponsored Presentation

Michael Juul Jensen: Vibro® Filtration for Harvest, Concentration & Refinery

### 12:55 pm - 02:25 pm: Lunch Break

### 02:25 pm - 03:40 pm: Session 3: Process

**02:25 pm - 02:40 pm:** Arun Sakthivel (The University of Manchester): Modelling of microalgal growth at different scale up level for advanced biomethane production

**02:40 pm - 02:55 pm:** Gladys Castillo (Decerna): The importance of infrastructure within LCA of microalgae production and processing facilities

**02:55 pm - 03:10 pm:** Tobias Hofmann (Bern University of Applied Sciences): Spatially dependent microalgal lipid production in a membrane biofilm reactor

**03:10 pm - 03:25 pm:** Gabriel Acien (University of Almeria): Uses of non-pressure membranes for microalgae biomass harvesting

**03:25 pm - 03:40 pm:** Claudio Fuentes-Grunewald (King Abdullah University of Science and Technology): Saudi Arabia as the new worldwide hot spot for large-scale microalgae cultivation

### 03:40 pm - 04:20 pm: Session 4: Industry

**03:40 pm - 03:50 pm:** Marta Sa (Lgem Synalgae): AlgaeHUB@: focused to unlock the potential of microalgae

**03:50 pm - 04:00 pm:** Alexandre Rodrigues (Necton): Strategies to improve sustainability and production capacity in a microalgae industrial plant

**04:00 pm - 04:10 pm:** John Benemann (MicroBio Engineering): The Cultivation of Microalgae in Raceway Ponds with Selected Cultivars

**04:10 pm - 04:20 pm:** Nico Betterle (ASTEASIER/University of Verona): Asteasier: the sustainable way for natural astaxanthin

### 04:20 pm - 04:30 pm: Beckman Coulter - Sponsored Presentation

Sebastian Blum: Accelerate microalgae production applying High Throughput Automation

### 04:30 pm - 05:10 pm: Coffee Break

### 05:10 pm - 06:25 pm: Session 5: Physiology

**05:10 pm - 05:25 pm:** Olivier Bernard (INRIA): Will Artificial Intelligence finally contribute to the microalgae sector?

**05:25 pm - 05:40 pm:** Matteo Ballottari (University of Verona): CO<sub>2</sub> availability influences nad(p)h redox state and lipid accumulation in *Chlamydomonas reinhardtii*

**05:40 pm - 05:55 pm:** Eduardo Gorron (CSIRO): Transcriptomic signature of lipid production in Australian *Aurantiochytrium* sp. TC20

**05:55 pm - 06:10 pm:** Zakaria Tazart (Mohammed VI polytechnic University of Benguerir): Enhanced lipid accumulation and biomass productivity in *Kirchneriella obesa* cultivated in a wastewater-seawater mix: physiological responses and treatment efficacy

**06:10 pm - 06:25 pm:** Dominik Refardt (Zurich University of Applied Sciences): Microalgae on acid: towards large-scale open cultivation of extremophiles

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### 06:25 pm - 07:19 pm: Session 5b: Industry

**06:25 pm - 6:35 pm:** Yongning Su (Inner Mongolia Rejuve Biotech Co., Ltd.): Large scale spirulina production in Inner Mongolia, China

**06:35 pm - 06:43 pm:** Carlos Silva (A4F): Algae-based circular economy – Suitability by Design

**06:43 pm - 06:51 pm:** Andre Mota (COLAB4FOOD): The environmental sustainability assessment of algae-based food products

**06:51 pm - 06:59 pm:** Felix Ghyczy (BlueBurn BV): Transforming the future of algae commerce

**06:59 pm - 07:09 pm:** Steve Skill (Horizon Bioreactors Ltd): The Horizon Photo-Bioreactor: a new technology for industrial scale extractive photo-fermentation

**07:09 pm - 07:19 pm:** Ioannis Tzovenis: Greece panorama

### 7:19 pm - 07:29 pm: Closure of the Conference Day 1

## Conference Day 2 - Wednesday 11 December 2024

### 09:00 am - 09:10 am: Opening Day 2

### 09:10 am - 09:40 am: Keynote Speaker

Hélène Marfaing (CEVA, France): Algae uses: a traditional food on the move in Europe

### 09:40 am - 10:55 am: Session 6: High Value Products

**09:40 am - 09:55 am:** Teresa Cesario (Instituto Superior Tecnico): Valorization of the green seaweed *Ulva rigida* to biodegradable plastics, gluconic acid and protein-rich aquafeed ingredients

**09:55 am - 10:10 am:** Stefano Cazzaniga (University of Verona): A novel *Chlorella vulgaris* mutant strain allows for the efficient production of lutein and zeaxanthin, pigments required for human health.

**10:10 am - 10:25 am:** Asad Ali (Wageningen University): Impact of electroporation on product recovery and microalgal viability: it is time to revisit the concept of cell milking?

**10:25 am - 10:40 am:** Rita Mota (acib GmbH): Research toward industrial implementation: Cynaoflan as a new polymeric raw material for cosmetic

**10:40 am - 10:55 am:** Stefan Kraan (Oceana Organic Products Ltd): The environmental and social impact and the role of algae; truth or fiction?

### 10:55 am - 11:35 am: Coffee Break

### 11:35 am - 11:40 am: Main challenges in the seaweed sector across the globe - collaboration opportunities

Helena Abreu (International Seaweed Association)

## Conference Day 2 - Wednesday 11 December 2024

### 11:40 am - 12:40 pm: Session 7: Europe

**How the EU and UN algae agendas can leverage each other's efforts at a European and global scale**

**11:40 am - 11:55 am:** Vincent Doumeizel (United Nations Global Compact): UN algae-related initiatives and the Plankton Manifesto

**11:55 am - 12:00 pm:** Laura Maragna (EurA Consulting): EU4Algae results and conclusions

**12:00 pm - 12:05 pm:** Julien Peris (Sustainable Blue Economy, European Climate, Infrastructure and Environment Executive Agency): CINEA algae projects and funding opportunities

**12:05 pm - 12:10 pm:** Maris Stulgis (DG MARE, European Commission): EU support to algae sector – latest developments

**12:10 pm - 12:40 pm:** Panel discussion

### 12:40 pm - 12:50 pm: SCHOTT - Sponsored Presentation

Fritz W. Wintersteller: Why Tubular Glass Photobioreactors?

### 12:50 pm - 02:20 pm: Lunch Break

### 02:20 pm - 03:35 pm: Session 8: Biorefinery

**02:20 pm - 02:35 pm:** Joaquin Pozo-Dengra (Biorizon Biotech): One-pot processing for microalgae-based biostimulants and biopesticides production: an integral utilisation approach

**02:35 pm - 02:50 pm:** Marta Cebrián (AZTI Foundation): Sustainable production of valuable ingredients from *Chlorella protothecoides* grown using a fed-batch fermentation strategy

**02:50 pm - 03:05 pm:** Joana Rosa (S2AQUAcoLAB): Microalgae: driving the green revolution in cell-based food production

**03:05 pm - 03:20 pm:** Enrica Uggetti (Universitat Politècnica de Catalunya): Assessing the environmental impacts and the cost-effectiveness of a biofertilizer from microalgae grown in wastewater

**03:20 pm - 03:35 pm:** Suvridha Gupta (Norwegian University of Life-Sciences): Multienzyme magnetic nanocatalyst for enhanced enzymatic hydrolysis of microalgae biomass grown in dairy wastewater for biorefinery applications

### 03:35 pm - 03:55 pm: Presentation of ALGAFLIX

Lara Gil & Christie de Vrij (EABA)

### 03:55 pm - 04:25 pm: Session 9: Production

**03:55 pm - 04:10 pm:** Henrik Geltner (Wageningen University and Research): Assessing properties of microalgae growth and metabolic state in real-time through multi-rate on-line elemental mass balancing methods

**04:05 pm - 04:25 pm:** Filipa Lopes (CentraleSupélec): Non-destructive monitoring of microalgae biofilms

### 04:25 pm - 05:00 pm: Coffee Break

### 05:00 pm - 05:05 pm: Picture Contest Presentation

Anne Pajot & Juliette Armeni (EABA)

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## Conference Day 2 - Wednesday 11 December 2024

### 05:05 pm - 05:35 pm: Session 10: High Value Products

**05:05 pm - 05:20 pm:** Carlos Infante (Fitoplancton Marino): A *Tetraselmis chuii*-derived high-value ingredient (TetraSOD) for agelessness through the improvement of cellular health

**05:20 pm - 05:35 pm:** Mariane Bittencourt Fagundes (University of Porto): Optimizing Nocoulin A Production: The Role of Light and Nutrient Conditions in *Nodularia* sp. LEGE 06071

### 05:35 pm - 05:50 pm: Algae Foundation and the Algae Technology Educational Consortium Education, Training, and Workforce Development Initiatives

Ira Levine (Algae Foundation/University of Southern Maine)

### 05:50 pm - 06:20 pm: Session 11: Food

**05:50 pm - 06:05 pm:** Fengzheng Gao (Sustainable Food Processing ETH Zurich): Bioaccessibility, bioavailability, and bioactivity assessment of microalgae-derived products for human nutrition and health

**06:05 pm - 06:20 pm:** Julia Baumgartner (ETH Zurich): Aqueous extraction and properties of lipid droplets from the cell wall deficient microalga *Chlamydomonas reinhardtii*

### 06:20 pm - 06:30 pm: Closure of the Conference Day 2

### 06:30 pm - 10:45 pm: Conference Dinner

## Conference Day 3 - Thursday 12 December 2024

### 09:00 am - 09:10 am: Opening Day 3

### 09:10 am - 09:40 am: Keynote Speaker

Susan Løvstad Holdt (The National Food Institute, Technical University of Denmark (DTU Food), Denmark): Bridging Science, Safety, and Sustainability: Advancing Seaweed as Europe's Future Food

### 09:40 am - 10:55 am: Session 12: Wastewater

**09:40 am - 09:55 am:** Paolina Scarponi (University of Modena and Reggio Emilia): Treatment of Watermelon Waste Using *Chlorella* sp., *Scenedesmus* sp., *Chlamydomonas* sp. and *Arthrospira* sp.

**09:55 am - 10:10 am:** Ethan Wood (Norsk institutt for vannforskning, NIVA): The Phycosphere of an Algal Co-culture Phycoremediation System: Filamentous Algae *Oedogonium* and *Stigeoclonium* Maintain Associated Bacterial Communities during Wastewater Remediation

**10:10 am - 10:25 am:** Jean-Baptiste Beigbeder (APESA): Unlocking the potential of vermicompost leachate as a promising substrate for semi-continuous cultivation of microalgae consortium

**10:25 am - 10:40 am:** Stephan Ende (Alfred Wegener Institute): How Recirculating Aquaculture Nutrient Streams Can Drive Europe's Microalgae Revolution?

**10:40 am - 10:55 am:** Jonathan Forbes (Decerna): LCA due diligence of a Carbon Dioxide Removal (CDR) system in Morocco

### 10:55 am - 11:25 am: Coffee Break

## Conference Day 3 - Thursday 12 December 2024

### 11:25 am - 12:40 pm: Session 13: Omics

**11:25 am - 11:40 am:** Igor Grigoriev (Joint Genome Institute/Lawrence Berkeley National Laboratory): Fueling the future with algal genomics

**11:40 am - 11:55 am:** Eliana Gasparatto (University of Verona): Engineering and cultivation of *Synechococcus* PCC 11901 to synthesize high added-value carotenoids

**11:55 am - 12:10 pm:** Alexandra Mystikou (Technology Innovation Institute), Algal Genomics in Biotechnology

**12:10 pm - 12:25 pm:** Irene Gallego (Agroscope): Assessing the environmental impact of gene-edited microalgae

**12:25 pm - 12:40 pm:** Ana Gonçalves (GreenCoLab): Gut Performance for Resilient Aquaculture Fish: Powered by Microalgae

### 12:40 pm - 12:50 pm: BrightWave - Sponsored Presentation

Tim Shaw: BrightWave: Transforming Indoor Algae Cultivation for Industrial Applications

### 12:50 pm - 02:20 pm: Lunch Break

### 02:20 pm - 03:05 pm: Session 14: Feed

**02:20 pm - 02:35 pm:** Tina Seligmann (s.Pro - sustainable Projects): The Potential of Algae in Aquaculture Feed in the EU

**02:35 pm - 02:50 pm:** Daniel Figueiredo (GreenCoLab): Improved *Pavlova gyra* strains for sustainable and nutritious aquafeeds

**02:50 pm - 03:05 pm:** Diogo Marques (Instituto Superior Tecnico - University of Lisbon): Fermentation strategies using food grade microbes for nutritional and economic valorization of *Ulva rigida* biomass

### 03:05 pm - 04:05 pm: Session 15: Biostimulants

**03:05 pm - 03:20 pm:** Liliana Rodolfi (University of Florence): Bioactivity of four nostoc strains: perspective of exploitation in agriculture

**03:20 pm - 03:35 pm:** Elena Ficara (Politecnico di Milano): Turning digestate into biostimulants via microalgae

**03:35 pm - 03:50 pm:** Amer Chabli (Cadi Ayyad University): Screening of cyanobacteria-based liquid extracts for their biostimulant effects on tomato plants growth and fruit quality

**03:50 pm - 04:05 pm:** Kristina Ljumovic (University of Verona): Effect of *Chlorella vulgaris* on growth characteristics of Basil (*Ocimum basilicum*) in hydroponics

### 04:05 pm - 04:10 pm: Presentation of YAS 2025

Daniel Figueiredo

### 04:10 pm - 04:20 pm: Session 16: Pharm-medical

Muriel Bardor (University of Rouen Normandie): PHAEOMAbs, a French initiative to improve the production yield of microalgae-based antibodies

### 04:20 pm - 04:50 pm: Coffee Break

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### 04:50 pm - 06:05 pm: Session 17: Biorefinery

**04:50 pm - 05:05 pm:** Isa Hiemstra (Wageningen University & Research): SWITCHING TO GREEN: Sustainable multi-product three-phase partitioning for seaweed biorefinery using recyclable, switchable solvents

**05:05 pm - 05:20 pm:** Wimar Reynaga (Wageningen University & Research): Deep eutectic solvents for co-extracting alginate and fucoxanthin from brown seaweed

**05:20 pm - 05:35 pm:** Oscar Elizondo Sada (Wageningen University and Research): Optimization of an enzyme assisted extraction for a multi-product biorefinery from the red seaweed *Palmaria palmata*

**05:35 pm - 05:50 pm:** Lais Galileu Speranza (GreenCoLab): Using Life-Cycle Assessment to evaluate the sustainability of algae biorefineries

**05:50 pm - 06:05 pm:** Juan José Gallardo (Universidad de Almería, Spain): Competitive adsorption and cross-flow dialysis to recover phycobiliproteins and polysaccharides from spirulina sp

### 06:05 pm - 07:05 pm: Session 18: Food

**06:05 pm - 06:15 pm:** Cristiana Nunes (LEAF, ISA, Universidade de Lisboa): Combining Seaweeds and Microalgae: Assessing hydrothermal extracts of *Chondrus Crispus* for gelled food snacks enriched with *Chlorella vulgaris*

**06:15 pm - 06:25 pm:** Lisiane Carvalho (LEAF, ISA, Universidade de Lisboa): Development and characterization of microalgae-enriched clean label hybrid hams

**06:25 pm - 06:35 pm:** Sónia Oliveira (LEAF, ISA, Universidade de Lisboa): Multisensory packaging: exploring algae-based 3D printed edible solutions for sustainable food experiences

**06:35 pm - 06:50 pm:** José Matheus (LEAF, ISA, Universidade de Lisboa): A sustainable twist on "caldo verde" using macro and microalgae

**06:50 pm - 07:05 pm:** Ivan Citakovic (ImmunRise Biocontrol France (IBF)): Exploitation of amphidinols for biopesticide production: environmental triggers, excretion patterns, and the distribution of active and less active forms in amphidinium carterae photobioreactor cultures

### 07:05 pm - 08:30 pm: Award Evening

## Conference Day 4 - Friday 13 December 2024

Different venue: Demokritos  
**Pick up at 08:00** at the Divani Caravel Hotel

### 09:00 am - 09:10 am: Opening Day 4

### 09:10 am - 09:40 am: Keynote Speaker

Lieve Laurens (National Renewable Energy Laboratory, USA): Building a Sustainable Carbon Efficient Future with Photosynthetic Algae Systems

### 09:40 am - 10:10 am: Session 19: Production

**09:40 am - 09:55 am:** John McGowen (Arizona State University): Characterization of a novel aphelid parasitoid of *picochlorum celeri* and its effects on outdoor productivity and robustness

**09:55 am - 10:10 am:** João Varela (CCMAR - Centre of Marine Sciences of Algarve, Portugal): A call to arms: the urgent need for novel bioinformatic tools for correctly identifying eukaryotic grazers and parasites in microalgae cultures

### 10:10 am - 10:40 am: Session 20: Pharma-medical

**10:10 am - 10:25 am:** Jennifer Saliba (LIENS Laboratory University La Rochelle): Marine fucoidan oligomers as promising multi-tasking formulations in cancer therapy

**10:25 am - 10:40 am:** Matthew Chadwick (The University of Edinburgh): An Investigation into the Prebiotic Potential of Fucoidans Extracted from Seaweed

### 10:40 am - 11:10 am: Coffee Break

### 11:10 am - 12:10 pm: Round table - DOs and DONTs in the algae sector

### 12:10 pm - 01:25 pm: Session 21: Wastewater

**12:10 pm - 12:25 pm:** Antonio Gavalas Olea (Hochschule Bremerhaven): *Galdieria sulphuraria*, an extremophile with promising Carbon capture performance through project ALGROW

**12:25 pm - 12:40 pm:** Pia Steinrücken (NORCE Norwegian Research Centre): Coupling microalgal production to recirculating aquaculture systems (RAS) at pilot scale

**12:40 pm - 12:55 pm:** Marco Mantovani (University of Milano Bicocca): Removal of different water micropollutants by microalgae-based iron nanoparticles

**12:55 pm - 01:10 pm:** Ronald Halim (University College Dublin): Nannochloropsis for the valorisation of side streams from critical agri-food and energy sectors in Europe

**01:10 pm - 01:25 pm:** Elena Passalacqua (Università degli Studi Milano-Bicocca): Optimisation of anaerobic digestion using microalgal-based carbon-encapsulated iron nanoparticles

### 01:25 pm - 01:30 pm: Closure of the Conference

### 01:30 pm - 02:00 pm: Lunch