

# Algae Biorefineries for Europe: towards a sustainable economy.

## Programme

### Day 1: Tuesday 17<sup>th</sup> October 2017

#### **9.15 – 11.10 Opening Session.**

Chair: Patricia Harvey

*Professor, University of Greenwich and Co-ordinator of D-Factory*

9.15 – 09.25: Welcome and Opening of the conference by Patricia Harvey, Chair

9.25 – 09.50: Microalgae: Crops for the future!

Philippe Willems

*Founder and General Manager, Value for Technology, BE.*

9.50 – 10.15: Value of the Algae Biomass sector in Europe and the current share of Biorefinery and future potential.

Vitor Verdelho

*President of the European Algae Biomass Association (EABA).*

10.15 – 10.40: The potential of algae within the blue economy: an EU perspective

Felix Leinemann

*Head of Unit MARE.A.2 | Blue Economy Sectors, Aquaculture and Maritime Spatial Planning, European Commission | DG Maritime Affairs and Fisheries.*

10.40 – 11.05: *Success story:* Cultivation of *Dunaliella* in large scale open raceways for the commercial production of beta-carotene and novel carotenoids.

Professor Dr Ami Ben-Amotz

*Chief Scientist of Nikken Sohonsha Co., Japan, co-founder of NBT, Israel, and Partner in the D-Factory project*

11:05 – 11:10: Pitch presentation: BioLinX provides links to commercialize your innovative idea

Raimo van der Linden

*REWIn West-Brabant, BioLinX project; <http://www.biولينx-project.eu/>*

#### **11.10 – 11.40 Coffee break and Poster Session**

**11.40 – 13.00 Session 2: Major innovations and new products from EU-supported biorefinery projects.** Objectives, highlights, main conclusions presented by the project coordinators  
*Chair tbc*

*Bisigodos:* High value-added chemicals and bioresins from algae biorefineries produced from CO<sub>2</sub> provided by industrial emissions.

Ana Palanca, *Aimplas, ES.*

*D-Factory:* From Development to Demo: A sustainable *Dunaliella* biorefinery.

Prof Patricia Harvey, *University of Greenwich, UK.*

*Miracles: Multi-product Integrated bioRefinery of Algae: from Carbon dioxide and Light Energy to high-value specialties.*

Hans Reith, *Wageningen University, NL.*

*PUFACHain: A value chain from micro-algae to PUFA.*

Anastasiia Kryvenda, *University Göttingen, DE.*

### **13.00 – 14.15 Lunch and Poster Session**

### **14.15 – 17.05 Session 3: Sustainability and economics.**

Chair: tbc

14.15 – 14.40: Sustainability of algae cultivation and use: conclusions and recommendations.

Dr Guido Reinhardt

*Institute for Energy and Environmental. Research, DE. (Partner in D-Factory, PUFACHain)*

14.40 – 15.05: Socio-economic sustainability of an innovative Algae Value Chain: the case of PUFACHain.

Marcel van der Voort,

*Wageningen University and Research, NL. (Partner in PUFACHain)*

15.05 – 15.30: Consumer acceptance and Marketing of microalgae products: insights from MIRACLES.

Philippe Willems, *Value for Technology, BE. (Partner in Miracles)*

### **15.30 – 16.00: Refreshment break and Poster Session.**

16.00 – 16.25: The Future of Algal Biorefineries in China: Lessons from the Past

Prof Min S Park

*Distinguished Professor, Center for Microalgal Biotechnology and Biofuels (CMBB), Institute of Hydrobiology, Chinese Academy of Sciences and senior advisor for SDIC Microalgae Biotechnology Center (MBC)*

16.25 – 16.50: Current US algae biorefineries, projects and perspectives

Dr Jose Olivares

*Editor-in-Chief of Algal Research, Co-founder and Chair of the International Conference for Algal Biomass, Biofuels and Bioproducts (AlgalBBB) and partner of the consulting firm Biologic Energy Partners, LLC.*

### **17.00 – 18.00: Panel discussion.**

The aim of the panel discussion is to identify requirements for successful further development and commercialisation. The project coordinators and representatives from industry will briefly present their views. Conference participants will be invited to provide feedback and input for the discussion.

### **18.00 – 18.30: Concluding remarks and next steps. Chair Patricia Harvey**

### **18.30 – 20.00: Cocktails, networking, poster session**

### **20.15: Conference Dinner in the Bedford hotel**

## **Day 2: Wednesday 18<sup>th</sup> October 2017**

### **9.00- 10.05: Session 1: Metabolism and strain development**

9.00 – 9.25: KEYNOTE. Unambiguous identification of algae strains through exact genetic characterisation and taxonomic identification Prof Thomas Friedl, *University Göttingen, DE (Coordinator PUFACHain)*

9.25 – 9.45: Searching for Superalgae, Dorinde Kleinegris, *UniResearch AS, Bergen, NO (Partner in Miracles)*

9.45 – 10.05: Molecular tools for real time monitoring and control of valuable target products during cultivation. Carlos Infante, *Fitoplancton Marino SL, ES. (Partner in Miracles)*

### **10.05- 13.00 Session 2: Cultivation and harvesting**

10.05 – 10.25: CO<sub>2</sub> concentration from air, Wim Brilman, *University of Twente, NL. (Partner in Miracles)*

10.25 – 10.45: Cultivation of *Dunaliella* in closed photobioreactors for high value products. Luis Costa A4F, *PT. (Partner in DFactory)*

### **10:45 – 11.15 Coffee Break and Poster session**

11.15 - 11.35 The Algae Crop Rotation principle as a potential basis for algae mass production, *Thomas Leya, Fraunhofer, DE. (Partner in PUFACHain)*

11:35 – 11.55 The Foam Bed Photobioreactor concept. Agnes Janoska / Marcel Janssen, *Wageningen University, NL. (Partner in Miracles)*

11.55 – 12.15 Membrane technology for integrated algae pre-harvesting and medium recirculation. Leen Bastiaens, *VITO, BE. (Partner in Miracles)*

12:15 – 12.35 Harvesting of a fragile alga *Dunaliella salina* by membrane filtration with permeate recovery for microalgae cultivation, J Crespo, F. Jacobs. *IBET, Evodos (Partners in D-Factory)*

### **12.35 – 14.00 Lunch and Poster Session**

### **14.00 – Session 3: Biorefinery**

14.00 – 14.25: KEYNOTE: Multiple products from algal biomass: Need for integrated Biorefinery approaches. Lolke Sijtsma, *Wageningen Food and Biobased Research, NL. (Partner in Miracles)*

14.25 – 14.45: Simulation-based optimization of microalgae refineries, from microalgae production in photobioreactors to microalgae-based products. Marie-Amélie de Ville d'Avray, *CASPEO. (Partner in Bisigodos)*

14.45 – 15.05: Lipid Analysis of Microalgae – The Influence of Sample Preparation, Michael Stehr, *(Partner in PUFACHain)*

15.05 – 15.25: Extraction of lipids from wet or dried algae, Martin Sova, *Natex (Partner in PUFACHain)*

15.25 – 15.45: Separation and valorisation of algae protein and polysaccharide fraction, Juha Linnekoski, *VTT, FI. (Partner in Bisigodos)*

15.45 – 16.05: Green biorefinery strategies, prof. Elena Ibanez, *Laboratory of Foodomics, CSIC, ES. (Partner in Miracles)*

**16.05 -16.35: Refreshment break and poster session**

16.35 - 16.55: Extraction and formulation of Carotenoids from *D.salina* using supercritical CO<sub>2</sub>-technologies, Nadine Igl, *NATECO (Partner in D-factory)*

16.55 - 17.15: Optimization and screening of product portfolios in algo-biorefinery value chains: from research through development to scale-up, A Kokossis, D Rooke, *National Technical University of Athens, GR. (Partner in D-Factory)*

17:15 – 17.35: Carotenoids and polysaccharides from *D.salina*: Technical challenges and opportunities from a formulators perspective. Isabel Mira, Karin Persson. *RISE (Partner in D-Factory)*

17.35 – 17.55 Sustainability assessment of the 5 Miracles value chains. Elke Breitmayer, *nova Institut für Ökologie und Innovation, DE. (Partner in Miracles)*

18:00 END of Program