

# International CeBiTec Research Conference 2017

## September 24<sup>th</sup> – 27<sup>th</sup>



**Advances in industrial biotechnology: Prospects and challenges for the development of algal biotechnology**

Venue: Center for Interdisciplinary Research (ZiF), Bielefeld University, Methoden 1, 33615 Bielefeld

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### Sunday, 24.09.2017

**All events on Sunday will take place at the Mercure Hotel, Am Johannisberg 5, 33615 Bielefeld**

**17.00 - open**

Registration

*Welcome & Opening*

**18.30 - 19.00**

**O. Kruse**, Scientific Director Center for Biotechnology

**19.00 - open**

Get together

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### Monday, 25.09.2017

**All further events will take place at the conference venue (ZiF)**

**9.00 - 9.15**

Announcements & Introduction

#### Session 1

*Chair O.Kruse*

**9.15 - 9.50**

**L. Herrera-Estrella** - Metabolic engineering of microalgae and cyanobacteria with a competitive advantage for industrial fermentation processes

**9.50 - 10.25**

**R. Sayre** - Producing algae for coproducts and energy; the PACE consortium

**10.25 - 10.50**

**R. Bassi** - Engineering photosynthetic light energy conversion efficiency by plants and algae

*Coffee Break, 10.50 - 11.20*

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#### Session 2

*Chair M. Posewitz*

**11.20 - 11.55**

**A. Falciatore** - Genetic engineering of marine diatoms

**11.55 - 12.20**

**K. Lauersen** - Green cell factory engineering for sustainable light-driven production of high-value products

**12.20 - 12.45**

**G. Peltier** - A microalgal photoenzyme converts fatty acids to hydrocarbons

*Lunch, 12.45 - 13.45*

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### Session 3

Chair M. Barbosa

13.45 - 14.20

**B. Hankamer** - Developing next-generation solar powered microalgae systems for the production of high value products, foods and renewable solar fuels

14.20 - 14.45

**Y. Li-Beisson** - Control of TAG synthesis in microalgae

14.45 - 15.10

**G. Perin** - Mathematical models to drive genetic engineering of algae photosynthetic productivity

Coffee Break & Poster Session, 15.10 - 16.30

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### Session 4

Chair R. Wijffels

16.30 - 17.05

**B. Parker** - Investigating the influence of the *Chlamydomonas reinhardtii* cell wall on downstream processing for recombinant protein production.

17.05 - 17.25

**H. Hyttinen** - Conception and construction of closed PBR cultivation systems for commercial microalgae production

17.25 - 17.50

**G.C. Besenyei** - Scale up and downstream process modelling of *Phaeodactylum tricornutum* for the recovery of high value recombinant proteins

17.50 - 18.15

**J. Nickelsen** - Biomedical application of photosynthesis

18.15 - 18.40

**C. Remacle** - Analysis of acetate assimilation pathways in *Chlamydomonas* cells cultivated in the light

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## Tuesday, 26.09.2017

9.00 - 9.15

Announcements & Introduction

### Session 5

Chair T. Morosinotto

9.15 - 9.50

**S. Mayfield** - Photosynthetic Bio-manufacturing in green algae; developing a synthetic nuclear promoter system for enhanced gene expression

9.50 - 10.25

**R. Brown** - Boosting lipid productivity of the oleaginous microalga *Nannochloropsis gaditana* via genome engineering

10.25 - 10.50

**S. Purton** - Synthetic biology tools for transgene expression in the *Chlamydomonas* chloroplast

Coffee Break, 10.50 - 11.20

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**Session 6**  
*Chair R. Sayre*

**11.20 - 11.55**

**A. Spicer** - Engineering the unicellular brown alga *Phaeodactylum tricornutum* for high-value triterpenoid sapogenin production

**11.55 - 12.20**

**P. Jones** - Tools and understanding for the development of genetically optimized cyanobacteria

**12.20 - 12.45**

**M. Ballotari** - Differential gene expression analysis of *Chlorella sorokiniana* cultivated in autotrophic vs. mixotrophic conditions reveals fine control of metabolism

*Lunch, 12.45 - 13.45*

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**Session 7**  
*Chair V. Wendisch*

**13.45 - 14.20**

**J. v. d. Oost** - CRISPR-Cas – from exploration to exploitation

**14.20 - 14.55**

**E. S. Jin** - Strain engineering of microalgae by use of genome editing technology and their potential applications

**14.55 - 15.20**

**M. Posewitz** - Modulation of photosynthetic and metabolic networks in photoautotrophic microorganisms for solar biofuels

*Coffee Break & Poster Session, 15.20 - 15.50*

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**Session 8**  
*Chair G. Peltier*

**15.50 - 16.15**

**P. Lindberg** - Metabolic engineering of cyanobacteria for generation of terpenoid hydrocarbons

**16.15 - 16.40**

**T. Happe** - Engineering the chloroplast of microalgae as a chassis for the direct production of solar fuels and chemicals

*Excursion (optional), 17.00 - 19.30*

*Conference Dinner, 19.30 - open*  
*Brauhaus "Joh. Albrecht", Hagenbruchstraße 8, 33602 Bielefeld*

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## Wednesday, 27.09.2017

**9.00 - 9.15**

Announcements & Introduction

### Session 9

*Chair S. Purton*

**9.15 - 9.50**

**R. Wijffels** - Towards industrial products from microalgae

**9.50 - 10.15**

**J. Archer** - Construction of a Red Sea industrial strain library for photosynthetic microbial cell factory applications in the Arabian Peninsula

**10.15 - 10.40**

**P. Lindblad** - Design and construction of cyanobacteria for direct solar fuels production

*Coffee Break, 10.40 - 11.10*

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### Session 10

*Chair P. Lindblad*

**11.10 - 11.45**

**K. Bisova** - Effect of high temperature on accumulation of energy reserves in microalgae

**11.45 - 12.10**

**M. Barbosa** - Microalgal oil production: improved yields and a new insight in metabolism

**12.10 - 12.20**

Concluding remarks - O. Kruse

*Conference closes, 12.30*

Keynote presentation

Regular presentation

Company/Sponsor presentation