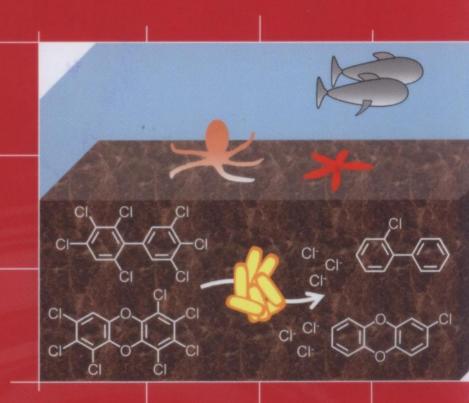
Current Opinion in

Volume 33 June 2015 ISSN 0958-1669

Biotechnology

Jan van der Meer & Greg N Stephanopoulos, Editors



June 2015

Environmental biotechnology

Edited by Spiros N Agathos and Nico Boon

Energy biotechnology

Edited by Eleftherios Terry Papoutsakis and Jack T Pronk

June 2015 Environmental biotechnology • Energy biotechnology

August 2015 Systems biology • Nanobiotechnology

October 2015 Chemical biotechnology • Pharmaceutical biotechnology

December 2015 Pathway engineering

February 2016 Food and plant biotechnology

Available online at www.sciencedirect.com

ScienceDirect





Available online at www.sciencedirect.com MKHAMHAENG

ScienceDirect

a.A. 2558

Volume 33, June 20

Abstracted/indexed in: BIOSIS, CAB Abstracts International, CAB Health, Change and Abstracts, EMBASE, Index Medicus, Medline. Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®

٧	Spiros N Agathos and Nico Boon Editorial overview: Environmental biotechnology	183	Sandra C dos Santos and Isabel Sá-Correia Yeast toxicogenomics: lessons from a eukaryotic cell model and cell factory
viii	Eleftherios Terry Papoutsakis and Jack T Pronk		
VIII	Editorial overview: Energy biotechnology	192	Guangming Jiang, Jing Sun, Keshab R Sharma and Zhiguo Yuan Corrosion and odor management in sewer systems
Facilia	annestal histochnology		
Envir	onmental biotechnology	198	Caroline Baroukh, Rafael Muñoz-Tamayo, Olivier Bernard
Edite	d by Spiros N Agathos and Nico Boon		and Jean-Philippe Steyer Mathematical modeling of unicellular microalgae and
23	Clayton Jeffryes, Spiros N Agathos and Gregory Rorrer		cyanobacteria metabolism for biofuel production
	Biogenic nanomaterials from photosynthetic microorganisms	206	Benoit Van Aken
	and the state of t	200	Gene expression changes in plants and microorganisms
73	Mira Okshevsky, Viduthalai R Regina and Rikke Louise Meyer Extracellular DNA as a target for biofilm control		exposed to nanomaterials
	a way B B	220	Benjamin Ricken, Boris A Kolvenbach and
87	Caitlin R Proctor and Frederik Hammes Drinking water microbiology – from measurement to		Philippe F-X Corvini
	management		Ipso-substitution - the hidden gate to xenobiotic degradation
	management		pathways
95	Joaquim Vila, Margalida Tauler and Magdalena Grifoll Bacterial PAH degradation in marine and terrestrial habitats	260	Christopher M Sales and Patrick KH Lee Resource recovery from wastewater: application of meta-omics
	machindology et a		to phosphorus and carbon management
103	Marta Carballa, Leticia Regueiro and Juan M Lema	000	Ursula Kües
	crobial management of anaerobic digestion: exploiting the crobiome-functionality nexus	268	Fungal enzymes for environmental management
112	Francis L de los Reyes III, Joseph E Weaver and Ling Wang A methodological framework for linking bioreactor function to microbial communities and environmental conditions	279	Bruno Sialve, Amandine Gales, Jérôme Hamelin, Nathalie Wery and Jean-Philippe Steyer Bioaerosol emissions from open microalgal processes and their potential environmental impacts: what can be learned from natural and anthropogenic aquatic environments?
119	Aharon Oren Halophilic microbial communities and their environments		
	Halophilic Hicrobial Communities and their services	287	Giulio Zanaroli, Andrea Negroni, Max M Häggblom and
125	Atsushi Kouzuma and Kazuya Watanabe Exploring the potential of algae/bacteria interactions		Fabio Fava Microbial dehalogenation of organohalides in marine and estuarine environments
142	Damian E Helbling	296	Ulas Tezel and Spyros G Pavlostathis
	Bioremediation of pesticide-contaminated water resources: the challenge of low concentrations	250	Quaternary ammonium disinfectants: microbial adaptation degradation and ecology
149	Kun Guo, Antonin Prévoteau, Sunil A Patil and	305	Ben Stenuit and Spiros N Agathos
140	Korneel Rabaey	500	Deciphering microbial community robustness through
	Engineering electrodes for microbial electrocatalysis		synthetic ecology and molecular systems synecology
157	Yu Zhang, Xuegong Li, Douglas H Bartlett and Xiang Xiao Current developments in marine microbiology: high-pressure	318	Rebecca E Parales, Rita A Luu, Jonathan G Hughes and Jayna L Ditty
	biotechnology and the genetic engineering of piezophiles		Bacterial chemotaxis to xenobiotic chemicals and naturally occurring analogs
176	Stephen A Jackson, Erik Borchert, Fergal O'Gara and		
170	Alan DW Dobson	327	Wei-Qin Zhuang, Jeffrey P Fitts, Caroline M Ajo-Franklin
	Metagenomics for the discovery of novel biosurfactants of environmental interest from marine ecosystems		Synthia Maes, Lisa Alvarez-Cohen and Tom Hennebel Recovery of critical metals using biometallurgy
	supported by th		classical yer solid considerations of microbial physiol

Energy biotechnology Edited by E Terry Papoutsakis and Jack T Pronk

- 1 Wesley Cardoso Generoso, Virginia Schadeweg,
 Mislav Oreb and Eckhard Boles
 Metabolic engineering of Saccharomyces cerevisiae for production of butanol isomers
- Philipp Savakis and Klaas J Hellingwerf Engineering cyanobacteria for direct biofuel production from CO₂
- 15 Sang Yup Lee, Hye Mi Kim and Seungwoo Cheon Metabolic engineering for the production of hydrocarbon fuels
- Riaan den Haan, Eugéne van Rensburg, Shaunita H Rose, Johann F Görgens and Willem H van Zyl
 Progress and challenges in the engineering of non-cellulolytic microorganisms for consolidated bioprocessing
- 39 Maria C Cuellar and Luuk AM van der Wielen Recent advances in the microbial production and recovery of apolar molecules
- Peter R Mooij, Gerben R Stouten, Mark CM van Loosdrecht and Robbert Kleerebezem Ecology-based selective environments as solution to contamination in microalgal cultivation
- 52 J Andrew Jones, Ö Duhan Toparlak and Mattheos AG Koffas Metabolic pathway balancing and its role in the production of biofuels and chemicals

60 Alan G Fast, Ellinor D Schmidt, Shawn W Jones and Bryan P Tracy

Acetogenic mixotrophy: novel options for yield improvement in biofuels and biochemicals production

- Andreas K Gombert and Antonius JA van Maris
 Improving conversion yield of fermentable sugars into fuel
 ethanol in 1st generation yeast-based production processes
- 130 Daniel G Olson, Richard Sparling and Lee R Lynd Ethanol production by engineered thermophiles
- 165 William B Whitaker, Nicholas R Sandoval, Robert K Bennett,
 Alan G Fast and Eleftherios T Papoutsakis
 Synthetic methylotrophy: engineering the production of biofuels
 and chemicals based on the biology of aerobic methanol
 utilization
- 228 Jonathan A Cray, Andrew Stevenson, Philip Ball, Sandip B Bankar, Elis CA Eleutherio, Thaddeus C Ezeji, Rekha S Singhal, Johan M Thevelein, David J Timson and John E Hallsworth
 Chaotropicity: a key factor in product tolerance of biofuel-producing microorganisms

The cover

Microbial dehalogenation of anthropogenic organohalides in marine sediments.