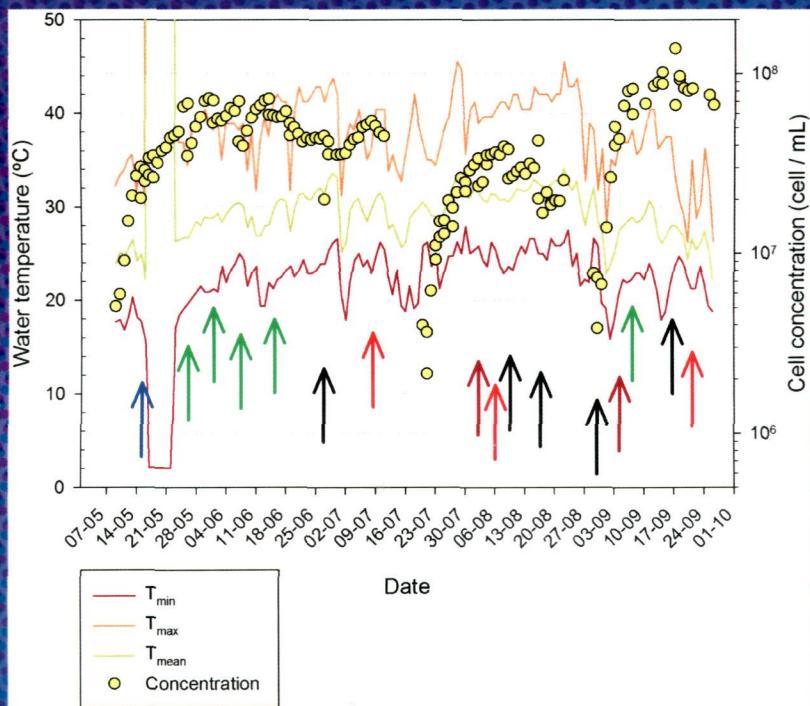


BIORESOURCE TECHNOLOGY

applied microbiology ■ bioconversion/biocatalysis ■ biofuels ■
biological engineering ■ biological waste treatment ■ biomass ■
bioprocesses ■ thermo-chemical treatment



Available online at www.sciencedirect.com

ScienceDirect



0960-8524(201407)163:C;1-8

(Abstracted/Indexer in: AGRICOLA database; Agricultural Engineering Abstracts; Analytical Abstracts (Royal Society of Chemistry Information Services); BIOSIS (Biological Abstracts); CAB Abstracts database; Elsevier BIOBASE/Current Awareness in Biological Sciences; Cambridge Scientific Abstracts; Chemical Abstracts; Current Contents/Agriculture, Biology and Environmental Sciences; Ecological Abstracts; Energy from Biomass and Municipal Wastes; Energy Information Abstracts; Engineering Index; Environmental Periodicals Bibliography; EMBASE/Excerpta Medica; Forestry Abstracts; Fuel and Energy Abstracts; Gas Abstracts; GEOBASE; Science Citation Index; SciSearch; Selected Water Resources Abstracts). Also covered in the abstract and citation database Scopus®. Full text available on ScienceDirect®.

For a full and complete Guide for Authors, please go to: <http://www.elsevier.com/locate/biotech>

CONTENTS

Volume 163, July 2014

Full Length Articles

Biological Waste Treatment

- 82 Potential of duckweed in the conversion of wastewater nutrients to valuable biomass: A pilot-scale comparison with water hyacinth
Y. ZHAO, Y. FANG, Y. JIN, J. HUANG, S. BAO, T. FU, Z. HE, F. WANG & H. ZHAO (China)
- 92 Anoxic phases are the main N₂O contributor in partial nitritation reactors treating high nitrogen loads with alternate aeration
J. GABARRÓ, P. GONZÁLEZ-CÁRCAMO, M. RUSCALLEDÀ, R. GANIGUÉ, F. GICH, M. D. BALAGUER & J. COLPRIM (Spain)
- 167 Selective adsorption and recovery of Au(III) from three kinds of acidic systems by persimmon residual based bio-sorbent: A method for gold recycling from e-wastes
R. FAN, F. XIE, X. GUAN, Q. ZHANG & Z. LUO (China)
- 193 Selective removal of polycyclic aromatic hydrocarbons (PAHs) from soil washing effluents using biochars produced at different pyrolytic temperatures
H. LI (China, USA), R. QU, C. LI, W. GUO, X. HAN, F. HE, Y. MA (China) & B. XING (USA)
- 199 A new absorbent by modifying walnut shell for the removal of anionic dye: Kinetic and thermodynamic studies
J.-S. CAO, J.-X. LIN, F. FANG, M.-T. ZHANG (China) & Z.-R. HU (Canada)
- 214 High specific activity for anammox bacteria enriched from activated sludge at 10 °C
T. L. G. HENDRICKX, C. KAMPMAN, G. ZEEMAN, H. TEMMINK, Z. HU, B. KARTAL & C. J. N. BUISMAN (The Netherlands)
- 244 Bio-augmentation for mitigating the impact of transient oxytetracycline shock on anaerobic ammonium oxidation (ANAMMOX) performance
R.-C. JIN, Q.-Q. ZHANG, Z.-Z. ZHANG, J.-H. LIU, BI-E. YANG, L.-X. GUO & H.-Z. WANG (China)
- 254 Enhanced decolorization of azo dye in a small pilot-scale anaerobic baffled reactor coupled with biocatalyzed electrolysis system (ABR-BES): A design suitable for scaling-up
D. CUI, Y.-Q. GUO (PR China), H.-S. LEE (Canada), W.-M. WU (USA), B. LIANG, A.-J. WANG & H.-Y. CHENG (PR China)

(Continued on inside back cover)

For further information about *Bioresource Technology* or other Elsevier products, why not access the COMPLETE ELSEVIER CATALOGUE via the INTERNET?

WWW: <http://www.elsevier.com>



CONTENTS (continued from outside back cover)

- 270 Environmental assessment of nutrient recycling from biological pig slurry treatment – Impact of fertilizer substitution and field emissions
D. BROCKMANN, M. HANHOUN, O. NÉGRI & A. HÉLIAS (France)
- Biofuels and Biorefineries**
- 6 Continuous acetone–butanol–ethanol (ABE) fermentation and gas production under slight pressure in a membrane bioreactor
C. CHEN, L. WANG, G. XIAO, Y. LIU, Z. XIAO, Q. DENG & P. YAO (China)
- 12 Oleaginous fungal lipid fermentation on combined acid- and alkali-pretreated corn stover hydrolysate for advanced biofuel production
Z. RUAN, M. ZANOTTI, S. ARCHER, W. LIAO & Y. LIU (USA)
- 54 Parameters characterization and optimization of activated carbon (AC) cathodes for microbial fuel cell application
C. SANTORO, K. ARTYUSHKOVA, S. BABANOVA, P. ATANASSOV (USA), I. IEROPOULOS (United Kingdom), M. GRATTIERI, P. CRISTIANI, S. TRASATTI (Italy), B. LI & A. J. SCHULER (USA)
- 74 Energy efficiency and environmental performance of bioethanol production from sweet sorghum stem based on life cycle analysis
M. WANG, Y. CHEN, X. XIA, J. LI & J. LIU (China)
- 136 Biorefinery concept in a microalgae pilot plant. Culturing, dynamic filtration and steam explosion fractionation
C. NURRA, C. TORRAS, E. CLAVERO, S. RÍOS, M. REY, E. LORENTE, X. FARRIOL & J. SALVADÓ (Spain)
- 152 Efficient process for ethanol production from Thai Mission grass (*Pennisetum polystachion*)
S. PRASERTWASU, D. KHUMSUPAN, T. KOMOLWANICH, T. CHAISUWAN, A. LUENGNARUEMITCHAI & S. WONGKASEMJIT (Thailand)
- 172 Stable high-titer n-butanol production from sucrose and sugarcane juice by *Clostridium acetobutylicum* JB200 in repeated batch fermentations
W. JIANG, J. ZHAO, Z. WANG & S.-T. YANG (USA)
- 186 *In situ* volatile fatty acids influence biogas generation from kitchen wastes by anaerobic digestion
Z. XU, M. ZHAO, H. MIAO, Z. HUANG, S. GAO & W. RUAN (China)
- 206 Evaluating the effects of scaling up on the performance of bioelectrochemical systems using a technical scale microbial electrolysis cell
R. K. BROWN, F. HARNISCH, S. WIRTH, H. WAHLANDT, T. DOCKHORN, N. DICHTL & U. SCHRÖDER (Germany)
- 236 Ethanol production from industrial hemp: Effect of combined dilute acid/steam pretreatment and economic aspects
M. KUGLARZ (Poland), I. B. GUNNARSSON (Denmark), S.-E. SVENSSON, T. PRADE, E. JOHANSSON (Sweden) & I. ANGELIDAKI (Denmark)
- 280 Deciphering characteristics of bicyclic aromatics – mediators for reductive decolorization and bioelectricity generation
B. XU (China), B.-Y. CHEN, C.-C. HSUEH (Taiwan), L.-J. QIN (China) & C.-T. CHANG (Taiwan)
- 295 Wheat bran biorefinery: An investigation on the starch derived glucose extraction accompanied by pre- and post-treatment steps
Ö. TIRPANALAN, M. REISINGER, F. HUBER, W. KNEIFEL & S. NOVALIN (Austria)
- 300 Evaluation of glycosyl hydrolases from thermophilic fungi for their potential in bioconversion of alkali and biologically treated *Parthenium hysterophorus* weed and rice straw into ethanol
C. MAHAJAN, B. S. CHADHA, L. NAIN & A. KAUR (India)
- 328 Simultaneous organic matter removal and disinfection of wastewater with enhanced power generation in microbial fuel cell
D. A. JADHAV, A. N. GHADGE & M. M. GHANGREKAR (India)
- 343 Life cycle assessment on microalgal biodiesel production using a hybrid cultivation system
V. O. ADESANYA (United Kingdom), E. CADENA (Spain), S. A. SCOTT & A. G. SMITH (United Kingdom)

(Continued on facing page)

CONTENTS (continued from inside back cover)**Biomass and Feedstock Utilization**

- 112 Effects of rhamnolipid and initial compost particle size on the two-stage composting of green waste
L. ZHANG & X. SUN (PR China)
- 320 Contrasting effects of hardwood and softwood organosolv lignins on enzymatic hydrolysis of lignocellulose
C. LAI (China, United States), M. TU, Z. SHI (United States), K. ZHENG (China), L. G. OLMOS (United States)
& S. YU (China)

Bioprocesses

- 1 Light harvesting and photocurrent generation by nanostructured photoelectrodes sensitized with a photosynthetic pigment: A new application for microalgae
R. MOHAMMADPOUR, S. JANFAZA & F. ABBASPOUR-AGHDAM (Iran)
- 26 The effective photoinduction of *Haematococcus pluvialis* for accumulating astaxanthin with attached cultivation
M. WAN, D. HOU, Y. LI, J. FAN, J. HUANG, S. LIANG, W. WANG, R. PAN, J. WANG & S. LI (PR China)
- 40 Development, validation and application of specific primers for analyzing the clostridial diversity in dark fermentation pit mud by PCR-DGGE
X.-L. HU, H.-Y. WANG, Q. WU & Y. XU (China)
- 64 *Trichoderma longibrachiatum* acetyl xylan esterase 1 enhances hemicellulolytic preparations to degrade corn silage polysaccharides
K. G. NEUMÜLLER, H. STREEKSTRA, H. GRUPPEN & H. A. SCHOLS (The Netherlands)
- 128 Exploring the high lipid production potential of a thermotolerant microalga using statistical optimization and semi-continuous cultivation
S.-H. HO (Taiwan, Japan), C.-N. N. CHEN, Y.-Y. LAI, W.-B. LU & J.-S. CHANG (Taiwan)
- 180 Utilization of lipid extracted algal biomass and sugar factory wastewater for algal growth and lipid enhancement of *Ettlia* sp.
M. MOON, C. W. KIM, W. FAROOQ, W. I. SUH, A. SHRIVASTAV (Republic of Korea), M. S. PARK (Republic of Korea, United States), S. K. MISHRA & J.-W. YANG (Republic of Korea)
- 228 Membrane photobioreactors for integrated microalgae cultivation and nutrient remediation of membrane bioreactors effluent
L. MARBELIA, M. R. BILAD, I. PASSARIS, V. DISCART, D. VANDAMME, A. BEUCKELS, K. MUYLAERT & I. F. J. VANKELECOM (Belgium)
- 308 Influence of light absorption rate by *Nannochloropsis oculata* on triglyceride production during nitrogen starvation
R. KANDILIAN (France, USA), J. PRUVOST, J. LEGRAND (France) & L. PILON (USA)

Microbial Products

- 33 Efficient calcium lactate production by fermentation coupled with crystallization-based *in situ* product removal
K. XU & P. XU (People's Republic of China)
- 48 Production of fumaric acid from biodiesel-derived crude glycerol by *Rhizopus arrhizus*
Y. ZHOU, K. NIE, X. ZHANG, S. LIU, M. WANG, L. DENG, F. WANG & T. TAN (PR China)
- 100 Simultaneous saccharification and fermentation of cassava to succinic acid by *Escherichia coli* NZN111
C. CHEN, S. DING, D. WANG, Z. LI & Q. YE (China)
- 160 Improving lactic acid productivity from wheat straw hydrolysates by membrane integrated repeated batch fermentation under non-sterilized conditions
Y. ZHANG, X. CHEN, B. QI (China), J. LUO (Denmark), F. SHEN, Y. SU, R. KHAN & Y. WAN (China)

(continued on previous page)

CONTENTS (continued from following page)

- 222 Ratio of intracellular precursors concentration and their flux influences hyaluronic acid molecular weight in *Streptococcus zooepidemicus* and recombinant *Lactococcus lactis*
S. S. BADLE, G. JAYARAMAN & K. B. RAMACHANDRAN (India)
- 287 The use of NaCl addition for the improvement of polyhydroxyalkanoate production by *Cupriavidus necator*
P. PASSANHA, G. KEDIA, R. M. DINSDALE, A. J. GUWY & S. R. ESTEVES (UK)

Physico-Chemical and Thermo-Chemical Processes for Biomass

- 18 Pyrolysis characteristics and kinetics of aquatic biomass using thermogravimetric analyzer
K. WU, J. LIU, Y. WU, Y. CHEN, Q. LI, X. XIAO & M. YANG (PR China)
- 106 Hydrotreating of wheat straw in toluene and ethanol
R. MURNIEKS, V. KAMPARS, K. MALINS & L. APSENIECE (Latvia)
- 123 A general kinetic model for the hydrothermal liquefaction of microalgae
P. J. VALDEZ, V. J. TOCCO & P. E. SAVAGE (United States)
- 143 Insight into the effect of hydrogenation on efficiency of hydrothermal liquefaction and physico-chemical properties of biocrude oil
H. LI, J. HU, Z. ZHANG, H. WANG, F. PING, C. ZHENG & H. ZHANG (China)
- 262 Catalytic upgrading of pyrolysis vapors from Jatropha wastes using alumina, zirconia and titania based catalysts
P. KAEWPENGKROW, D. ATONG & V. SRICHAROENCHAIKUL (Thailand)
- 335 Pyrolysis kinetic and product analysis of different microalgal biomass by distributed activation energy model and pyrolysis-gas chromatography-mass spectrometry
X. YANG, R. ZHANG, J. FU (China), S. GENG (China, USA), J. J. CHENG & Y. SUN (China)

Short Communications

- 356 Spatial structure characteristic analysis of corn stover during alkali and biological co-pretreatment using XRD
Y. TIANXUE, Y. LI, H. HAOBO, X. BEIDOU, H. LIANSHENG, W. XIAOWEI, H. CAIHONG, W. KUN, Z. YING & C. BIN (China)
- 360 Production of biodiesel fuel from canola oil with dimethyl carbonate using an active sodium methoxide catalyst prepared by crystallization
T. KAI, G. L. MAK, S. WADA, T. NAKAZATO, H. TAKANASHI (Japan) & Y. UEMURA (Malaysia)
- 364 Color, organic matter and sulfate removal from textile effluents by anaerobic and aerobic processes
F. M. AMARAL, M. T. KATO, L. FLORÊNCIO & S. GAVAZZA (Brazil)
- 370 A cost-effective strategy for the bio-prospecting of mixed microalgae with high carbohydrate content: Diversity fluctuations in different growth media
G. CEA-BARCIA, G. BUITRÓN, G. MORENO & G. KUMAR (Mexico)
- 374 Competitive adsorption of heavy metal by extracellular polymeric substances (EPS) extracted from sulfate reducing bacteria
J. WANG, Q. LI, M.-M. LI, T.-H. CHEN, Y.-F. ZHOU & Z.-B. YUE (China)
- 377 Characteristics and enzymatic hydrolysis of cellulose-rich fractions from steam exploded and sequentially alkali delignified bamboo (*Phyllostachys pubescens*)
S.-N. SUN, X.-F. CAO, X.-M. ZHANG, F. XU, R.-C. SUN (China) & G. L. JONES (UK)
- 381 Effect of acclimation and nutrient supply on 5-tolyltriazole biodegradation with activated sludge communities
B. HERZOG (Canada), H. YUAN (United States), H. LEMMER, H. HORN & E. MÜLLER (Germany)
- 386 Humic acids-based hierarchical porous carbons as high-rate performance electrodes for symmetric supercapacitors
Z.-J. QIAO, M.-M. CHEN, C.-Y. WANG & Y.-C. YUAN

(continued on previous page)

CONTENTS (*continued from following page*)

- 390 Ethanol production from xylan-removed sugarcane bagasse using low loading of commercial cellulase
J. LI, P. ZHOU, H. LIU, K. WU, W. XIAO, Y. GONG, J. LIN & Z. LIU (PR China)
- 395 The effect of solids retention times on the characterization of extracellular polymeric substances and soluble microbial products in a submerged membrane bioreactor
L. DUAN (PR China, USA), Y. SONG, H. YU, S. XIA (PR China) & S. W. HERMANOWICZ (USA, PR China)

Erratum

- 399 Retraction notice to "Feasibility of biogas production from anaerobic co-digestion of herbal-extraction residues with swine manure" [Bioresour. Technol. 102 (2011) 6458–6463]
Y. LI, X.-L. YAN, J.-P. FAN, J.-H. ZHU & W.-B. ZHOU (China)

Cover figure: Growth of *N. gaditana* in PBR0 in terms of concentration plotted with mean medium pH, maximum, minimum and mean temperatures. Green arrow: dilution due to recollection to inoculate other PBR and restoration of the PBR volume. Black arrow: recollection to perform harvesting operations. Blue arrow: increment of the PBR volume due to the addition of more phototubes. Brown arrow: reduction of the concentration due to leaks and consequent water addition to reconstitute total volume. Red arrow: contamination episode. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.). See the article "Biorefinery concept in a microalgae pilot plant. Culturing, dynamic filtration and steam explosion fractionation" by C. Nurra et al.