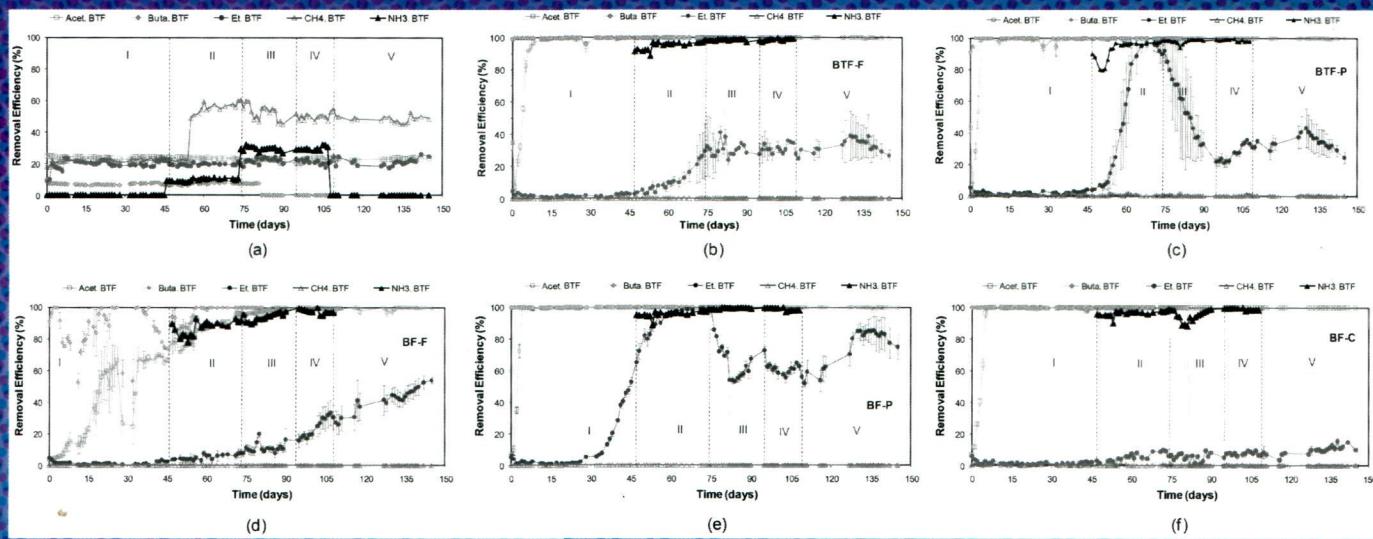


BIORESOURCE TECHNOLOGY

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



Available online at www.sciencedirect.com

SciVerse ScienceDirect



0960-8524 (201301) 127 : C; 1-N

(Abstracted/Indexed 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 SciVerse Scopus®. Full text available on SciVerse ScienceDirect®.

For a full and complete Guide for Authors, please refer to BITE, Vol 121C. The instructions can also be found at:
<http://www.elsevier.com/locate/bite>

CONTENTS

Volume 127, January 2013

Review

- 500 Role and significance of beta-glucosidases in the hydrolysis of cellulose for bioethanol production
R. R. SINGHANIA, A. K. PATEL (France), R. K. SUKUMARAN (India), C. LARROCHE (France) & A. PANDEY (India)

Full Length Articles

Biological Waste Treatment

- 9 Performance and energy economics of mesophilic and thermophilic digestion in anaerobic hybrid reactor treating coal wastewater
A. RAMAKRISHNAN & R. Y. SURAMPALLI (United States)
- 25 Thermostability, pH stability and dye degrading activity of a bacterial laccase are enhanced in the presence of Cu₂O nanoparticles
A. MUKHOPADHYAY, A. K. DASGUPTA & K. CHAKRABARTI (India)
- 37 Development of an activated carbon-packed microbial bioelectrochemical system for azo dye degradation
A. CARDENAS-ROBLES, E. MARTINEZ, I. RENDON-ALCANTAR, C. FRONTANA & L. GONZALEZ-GUTIERREZ (Mexico)
- 49 Synergism of *Pseudomonas aeruginosa* and Fe⁰ for treatment of heavy metal contaminated effluents using small scale laboratory reactor
R. SINGH, N. R. BISHNOI, A. KIRROLIA & R. KUMAR (India)
- 106 Fluoride adsorption on carboxylated aerobic granules containing Ce(III)
X.-H. WANG, R.-H. SONG, H.-C. YANG, Y.-J. SHI, G.-B. DANG, S. YANG, Y. ZHAO, X.-F. SUN & S.-G. WANG (China)
- 143 Anaerobic methane production from five common grassland species at sequential stages of maturity
J. MCENIRY & P. O'KIELY (Ireland)
- 151 Enrichment and characterization of a bacteria consortium capable of heterotrophic nitrification and aerobic denitrification at low temperature
S. YAO, J. NI, Q. CHEN (China) & A. G. L. BORTHWICK (Ireland)
- 181 Characterization of aerobic granular sludge treating high strength agro-based wastewater at different volumetric loadings
N. ABDULLAH, A. YUZIR (Malaysia), T. P. CURTIS (United Kingdom), A. YAHYA & Z. UJANG (Malaysia)

(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*)

- 188 Application of Anaerobic Digestion Model No. 1 for describing anaerobic digestion of grass, maize, green weed silage, and industrial glycerine
P. BIERNACKI, S. STEINIGEWEG, A. BORCHERT & F. UHLENHUT (Germany)
- 195 Propionate addition enhances the biodegradation of the xenobiotic herbicide propanil and its metabolite
A. OEHMEN, R. MARQUES, J. P. NORONHA, G. CARVALHO & M. A. M. REIS (Portugal)
- 223 Application of microwave radiation to biofilm heating during wastewater treatment in trickling filters
M. ZIELIŃSKI, M. ZIELIŃSKA & M. DĘBOWSKI (Poland)
- 275 Solid state anaerobic co-digestion of yard waste and food waste for biogas production
D. BROWN & Y. LI (United States)
- 312 Methane production from cattle manure supplemented with crude glycerin from the biodiesel industry in CSTR and IBR
L. CASTRILLÓN, Y. FERNÁNDEZ-NAVA, P. ORMAECHEA & E. MARAÑÓN (Spain)
- 326 Ensiling of fish industry waste for biogas production: A lab scale evaluation of biochemical methane potential (BMP) and kinetics
G. K. KAFLE, S. H. KIM & K. I. SUNG (Republic of Korea)
- 337 Biodegradation of chlorpyrifos and 3,5,6-trichloro-2-pyridinol by *Cupriavidus* sp. DT-1
P. LU, Q. LI, H. LIU, Z. FENG, X. YAN, Q. HONG & S. LI (People's Republic of China)
- 350 Removal of microelemental Cr(III) and Cu(II) by using soybean meal waste – Unusual isotherms and insights of binding mechanism
A. WITEK-KROWIAK (Poland) & D. HARIKISHORE KUMAR REDDY (South Korea)
- 366 Biofiltration of a mixture of ethylene, ammonia, *n*-butanol, and acetone gases
S.-H. LEE, C. LI, A. J. HEBER, J. NI & H. HUANG (USA)
- 400 N₂O emission in a partial nitrification system: Dynamic emission characteristics and the ammonium-oxidizing bacteria community
Q. KONG, S. LIANG, J. ZHANG, H. XIE, M. MIAO & L. TIAN (PR China)
- 415 Evaluation of integrated anaerobic/aerobic fixed-bed sequencing batch biofilm reactor for decolorization and biodegradation of azo dye Acid Red 18: Comparison of using two types of packing media
E. HOSSEINI KOUPAIE, M. R. ALAVI MOGHADDAM & S. H. HASHEMI (Iran)
- 464 A new approach for rhenium(VII) recovery by using modified brown algae *Laminaria japonica* adsorbent
Y. XIONG, J. XU, W. SHAN, Z. LOU, D. FANG, S. ZANG & G. HAN (PR China)
- 473 Simulation of the performance of aerobic granular sludge SBR using modified ASM3 model
M. ZHOU, J. GONG, C. YANG & W. PU (PR China)

Biofuels

- 1 Simultaneous co-metabolic decolourisation of azo dye mixtures and bio-electricity generation under thermophilic (50 °C) and saline conditions by an adapted anaerobic mixed culture in microbial fuel cells
E. FERNANDO, T. KESHAVARZ & G. KYAZZE (UK)
- 81 Life cycle assessment of two emerging sewage sludge-to-energy systems: Evaluating energy and greenhouse gas emissions implications
Y. CAO (China, Poland) & A. PAWŁOWSKI (Poland)
- 119 Ethanol production from *Saccharina japonica* using an optimized extremely low acid pretreatment followed by simultaneous saccharification and fermentation
J. Y. LEE, P. LI, J. LEE, H. J. RYU & K. K. OH (South Korea)
- 138 Comparison in performance of sediment microbial fuel cells according to depth of embedded anode
J. AN, B. KIM, J. NAM (Republic of Korea), H. Y. NG (Singapore) & I. S. CHANG (Republic of Korea)

(Continued on facing page)

CONTENTS (continued from inside back cover)

- 158 Optimization of a microbial fuel cell for wastewater treatment using recycled scrap metals as a cost-effective cathode material
O. LEFEBVRE, Z. TAN, Y. SHEN & H. Y. NG (Singapore)
- 165 Investigation of microwave dielectric properties of biodiesel components
P. D. MULEY & D. BOLDOR (United States)
- 202 Fermentation of liquefacted hydrothermally pretreated sweet sorghum bagasse to ethanol at high-solids content
L. MATSAKAS & P. CHRISTAKOPOULOS (Greece)
- 242 Biogas production from pear residues using sludge from a wastewater treatment plant digester. Influence of the feed delivery procedure
B. ARHOUN (Morocco, Spain), A. BAKKALI, R. EL MAIL (Morocco), J. M. RODRIGUEZ-MAROTO & F. GARCIA-HERRUZO (Spain)
- 267 Development of a novel three-stage fermentation system converting food waste to hydrogen and methane
D.-H. KIM & M.-S. KIM (Republic of Korea)
- 291 High titer ethanol production from SPORL-pretreated lodgepole pine by simultaneous enzymatic saccharification and combined fermentation
T. Q. LAN (China, USA), R. GLEISNER, J. Y. ZHU, B. S. DIEN & R. E. HECTOR (USA)
- 378 Evaluation of *Laminaria*-based microbial fuel cells (*LbMs*) for electricity production
V. GADHAMSHETTY, D. BELANGER, C.-J. GARDINER, A. CUMMINGS & A. HYNES (USA)
- 422 Biochemical features and bioethanol production of microalgae from coastal waters of Pearl River Delta
H. GUO, M. DAROCH, L. LIU, G. QIU (China), S. GENG & G. WANG (China, USA)
- 441 Temperature modulation of fatty acid profiles for biofuel production in nitrogen deprived *Chlamydomonas reinhardtii*
G. O. JAMES, C. H. HOCART, W. HILLIER, G. D. PRICE & M. A. DJORDJEVIC (Australia)
- 448 Lowering the applied potential during successive scratching/re-inoculation improves the performance of microbial anodes for microbial fuel cells
S. F. KETEP, A. BERGEI, M. BERTRAND, W. ACHOUAK & E. FOUREST (France)

Biomass and Feedstock Utilization

- 231 Enzymatic analyses demonstrate thermal adaptation of α -glucosidase activity in starch amended gully waste
J. D. W. ADAMS & K. M. SCOTT (UK)
- 236 Structural features and antioxidant activity of xylooligosaccharides enzymatically produced from sugarcane bagasse
J. BIAN, F. PENG, X.-P. PENG, P. PENG, F. XU & R.-C. SUN (China)

Bioprocesses

- 126 Effect of long-term starvation conditions on polyphosphate- and glycogen-accumulating organisms
M. VARGAS (Australia, Spain), Z. YUAN (Australia) & M. PIJUAN (Australia, Spain)
- 175 Silver-embedded modified hyperbranched epoxy/clay nanocomposites as antibacterial materials
B. ROY, P. BHARALI, B. K. KONWAR & N. KARAK (India)
- 216 Attached cultivation technology of microalgae for efficient biomass feedstock production
T. LIU, J. WANG (PR China), Q. HU (USA), P. CHENG, B. JI, J. LIU, Y. CHEN, W. ZHANG, X. CHEN, L. CHEN, L. GAO, C. JI & H. WANG (PR China)
- 248 High efficient treatment of citric acid effluent by *Chlorella vulgaris* and potential biomass utilization
C. LI, H. YANG, X. XIA, Y. LI, L. CHEN, M. ZHANG, L. ZHANG & W. WANG (People's Republic of China)
- 386 Detection and quantitation of lipid in the microalga *Tetraselmis subcordiformis* (Wille) Butcher with BODIPY 505/515 staining
D. XU, Z. GAO, F. LI, X. FAN, X. ZHANG, N. YE, S. MOU, C. LIANG & D. LI (China)

(continued on previous page)

CONTENTS (*continued from last page*)

- 429 Sensing of plant hydrolysate-related phenolics with an *aaeXAB::luxCDABE* bioreporter strain of *Escherichia coli*
A. K. MONNAPPA, S. LEE & R. J. MITCHELL (South Korea)
- 456 Performance of a flat panel reactor in the continuous culture of microalgae in urban wastewater: Prediction from a batch experiment
J. RUIZ, P. D. ÁLVAREZ-DÍAZ, Z. ARBIB, C. GARRIDO-PÉREZ, J. BARRAGÁN & J. A. PERALES (Spain)
- 482 *Ettlia* sp. YC001 showing high growth rate and lipid content under high CO₂
C. YOO, G.-G. CHOI, S.-C. KIM & H.-M. OH (Republic of Korea)

Microbial Products

- 209 Enhancement of lipopeptides production in a two-temperature-stage process under SSF conditions and its bioprocess in the fermenter
Z. ZHU, R. LI, G. YU, W. RAN & Q. SHEN (China)
- 256 End-of-life of starch-polyvinyl alcohol biopolymers
M. GUO, D. C. STUCKEY & R. J. MURPHY (UK)
- 407 Production of recombinant *Bacillus subtilis* chitosanase, suitable for biosynthesis of chitosan-oligosaccharides
P. PECHSRICHUANG, K. YOOHAT & M. YAMABHAI (Thailand)
- 435 Lipid production by *Rhodosporidium toruloides* Y2 in bioethanol wastewater and evaluation of biomass energetic yield
W. ZHOU, W. WANG, Y. LI & Y. ZHANG (China)
- 489 Production and characterization of a bioflocculant produced by *Aspergillus flavus*
A. H. R. ALJUBOORI, A. IDRIS, N. ABDULLAH & R. MOHAMAD (Malaysia)

Physico-Chemical and Thermo-Chemical Processes for Biomass

- 18 Comparison of the impact of ionic liquid pretreatment on recalcitrance of agave bagasse and switchgrass
J. A. PEREZ-PIMENTA, M. G. LOPEZ-ORTEGA (Mexico), P. VARANASI, V. STAVILA, G. CHENG, S. SINGH & B. A. SIMMONS (United States)
- 44 Pyrolysis of high-ash sewage sludge in a circulating fluidized bed reactor for production of liquids rich in heterocyclic nitrogenated compounds
W. ZUO, B. JIN, Y. HUANG, Y. SUN, R. LI & J. JIA (China)
- 59 A combined process of activated carbon adsorption, ion exchange resin treatment and membrane concentration for recovery of dissolved organics in pre-hydrolysis liquor of the kraft-based dissolving pulp production process
J. SHEN (China, Canada), I. KAUR, M. M. BAKTASH, Z. HE & Y. NI (Canada)
- 66 Fabrication, characterization and application of nitrogen-containing carbon nanospheres obtained by pyrolysis of lignosulfonate/poly(2-ethylaniline)
Z.-W. HE, Q.-F. LÜ & Q. LIN (People's Republic of China)
- 72 Catalytic hydrothermal gasification of algae for hydrogen production: Composition of reaction products and potential for nutrient recycling
J. A. ONWUDILI, A. R. LEA-LANGTON, A. B. ROSS & P. T. WILLIAMS (United Kingdom)
- 92 Catalyzed modified clean fractionation of switchgrass
I. CYBULSKA, G. P. BRUDECKI, B. R. HANKERSON, J. L. JULSON & H. LEI (USA)
- 100 Ultrasonication-assisted manufacture of cellulose nanocrystals esterified with acetic acid
L. TANG, B. HUANG, Q. LU (China), S. WANG (USA), W. OU, W. LIN & X. CHEN (China)
- 112 Optimization of microwave-assisted calcium chloride pretreatment of corn stover
H. LI & J. XU (PR China)

(continued on previous page)

CONTENTS (*continued from following page*)

- 132 Separation and characterization of cellulose fibers from cypress wood treated with ionic liquid prior to laccase treatment
M. MONIRUZZAMAN & T. ONO (Japan)
- 281 Catalytic conversion wood syngas to synthetic aviation turbine fuels over a multifunctional catalyst
Q. YAN, F. YU (USA), J. LIU (PR China), J. STREET (USA), J. GAO (PR China), Z. CAI & J. ZHANG (USA)
- 298 The kinetic analysis of the pyrolysis of agricultural residue under non-isothermal conditions
C. GAI, Y. DONG & T. ZHANG (PR China)
- 306 Hydrotreatment of bio-oil over Ni-based catalyst
X. ZHANG, T. WANG, L. MA, Q. ZHANG & T. JIANG (PR China)
- 318 Oxidative torrefaction of biomass residues and densification of torrefied sawdust to pellets
C. WANG (PR China, Canada), J. PENG (Canada), H. LI (Canada, PR China), X. T. BI, R. LEGROS, C. J. LIM (Canada) & S. SOKHANSANJ (Canada, United States)
- 343 Effect of different steam explosion conditions on methane potential and enzymatic saccharification of birch
V. VIVEKANAND, E. F. OLSEN, V. G. H. EIJSINK & S. J. HORN (Norway)
- 358 Techno-economic analysis of monosaccharide production via fast pyrolysis of lignocellulose
Y. ZHANG, T. R. BROWN, G. HU & R. C. BROWN (United States)
- 391 Long-term operation of biomass-to-liquid systems coupled to gasification and Fischer-Tropsch processes for biofuel production
K. KIM, Y. KIM, C. YANG, J. MOON, B. KIM, J. LEE, U. LEE, S. LEE, J. KIM, W. EOM, S. LEE, M. KANG & Y. LEE (South Korea)
- 494 Fast pyrolysis of microalgae remnants in a fluidized bed reactor for bio-oil and biochar production
K. WANG, R. C. BROWN, S. HOMSY, L. MARTINEZ & S. S. SIDHU (United States)

Inlet contaminant concentrations (a) and daily contaminant removal efficiencies from the foam biotrickling filters (b), perlite biotrickling filters (c), foam biofilters (d), perlite biofilters (e), and compost biofilters (f). See the article "Biofiltration of a mixture of ethylene, ammonia, *n*-butanol, and acetone gases" by S.-h. Lee et al.