

Korean Journal of Chemical Engineering

Volume 41 • Number 3 • March 2024

41(3) 553–944 (2024) • Print: ISSN 0256-1115 • Online: ISSN 1975-7220

REVIEW ARTICLES

Defluorination Techniques: Past, Present and Future Prospective

R. Khatkar • S. Nagpal 553

A Review on the Mercerization of Natural Fibers: Parameters and Effects

C.L. Luchese • J.B. Engel • I.C. Tessaro 571

A Comprehensive and Critical Assessment on the Efficiency of Natural and Synthetic Adsorbents for the Removal of Recalcitrant Malachite Green from Water: Present Level and Future Perspectives

L. Dutta • G.K. Sethi • S. Dey 589

Recent Development on Photocatalysts and Membrane Processes for Photoreduction of CO₂ into C1 Solar Fuels

J.J. Chen • P.C. Oh • S.B.M. Saleh 609

RAPID COMMUNICATION

Development of Antibiotic-Protected Antimicrobial Tetracycline-Loaded GU (Guar Gum) Gel for Long-Term Storage

G. Paramasivam • D. Dhamodharan • H.-S. Byun 639

ORIGINAL ARTICLES

A Systematic Technique for Kinetic Parameter Estimation in Heterogeneous Solid Catalytic Reaction Networks with Applications

T. Fernandes • S. Silva • A. Araújo 647

Techno-economic Analysis and Life Cycle Impact Assessment for the Valorisation of Kraft Lignin and Low-Voltage Hydrogen Production

H. Soltani Panah • D.H. Jeong 665

Modelling of Humic Acids Extraction Process Assisted by Low-Intensity Ultrasound with the Use of Three-Level Fractional Factorial Design

D. Nieweś 681

DEM-CFD Analysis of Fluid Flow in Packed Bed Under the Small Column-to-Particle-Diameter Ratios

M. Dang • F. Wang • X. Jia 697

Transport and Optical Properties of *n*-Butylamine + Alkanols (C₃–C₄) Mixtures for Enhanced CO₂ Absorption

S. Verma • S. Gahlyan • P. Bhagat • M. Rani • S. Rana • Y. Lee • S. Maken 715

CFD Study and RSM Optimization of Acetylene Production in Partial Oxidation Process

M.S. Ghayour • S.R. Shabanian 729

Synthesis and Characterization of Bimetallic ZnCo-ZIF-71 with Defect for an Efficient Catalytic CO₂ Conversion

Y. Gu • S. Yoon • R. Babu • S.-J. Cho • Y.G. Chung • D.-W. Park 749

Paper-Based Solid-State Micro-supercapacitors Fabricated by Hydrophobic Wax Barrier Printing

N.Y. Kim • I.H. Oh • S.T. Chang 763

Well-Dispersed Fluorine-doped Tin Oxide Nanoparticles on the One-Dimensional Network Structure of Carbon Nanofibers for Enabling Ultrafast Lithium Storage

S.-H. Yoon • K.-W. Sung • H.-J. Ahn 773

Carbon Dioxide Removal by Chemically and Thermally Reduced Graphene-Based Adsorbents

S.B. Singh • M. De 783

Azo Dye Decolorization in Sole Biocatalyzed Electrolysis System (BES) and Coupled with Anaerobic Sequencing Batch Reactor (ASBR-BES) in Operation with Ideal Synthetic Wastewater and Domestic Wastewater

R. Bakhshi • N. Talebbeydokhti • M. Salari 797

Ag Modified Pinecone Photoabsorber for Highly Efficient Interfacial Solar Steam Generation and Wastewater Treatment

Z. Niazi • M. Shafaei • M. Asarnia • E.K. Goharshadi 807

(Contents continued on inside back cover)

Korean Journal of Chemical Engineering