ISSN 1978-2993

Bulletin of Chemical Reaction Engineering & Catalysis

Volume 8, Issue 2, Year 2013, December 2013

An Electronic International Journal. Available online at: *http://bcrec.undip.ac.id/*

Bull. Chem. React. Eng. Catal.	Vol. 8	No. 2	Pages: 89 - 177	Semarang December 2013	ISSN 1978 -2993

Published by:

Department of Chemical Engineering, Diponegoro University

Masyarakat Katalis Indonesia – Indonesian Catalyst Society (MKICS)

Available online at BCREC Website: http://bcrec.undip.ac.id

Bulletin of Chemical Reaction Engineering & Catalysis, 8 (2), 2013, i

EDITORIAL BOARD

Available online at BCREC Website: http://bcrec.undip.ac.id

Bulletin of Chemical Reaction Engineering & Catalysis, 8 (2), 2013, ii

AIMS AND SCOPE

Bulletin of Chemical Reaction Engineering & Catalysis (ISSN 1978-2993), an electronic international journal, provides a forum for publishing the novel technology related to chemical reaction engineering and catalysis.

Scientific articles dealing with the following topics in chemical reaction engineering, catalysis engineering, catalyst characterization, novel innovation of chemical reactor, etc. are particularly welcome.
The journal encompasses original research articles, review articles, and short communications, including: fundamental of catalysis; fundamental of chemical reaction engineering; chemistry of catalyst and catalysis; applied chemical reaction engineering; applied catalysis; applied bio-catalysis; applied bio-reactor; membrane bio-reactor; chemical reactor design; catalyst regeneration; surface chemistry of catalyst; bio-catalysis; enzymatic catalytic reaction; industrial practice of catalyst; industrial practice of chemical reactor engineering; and application of plasma technology in catalysis and chemical reactor.

The manuscript articles should be submitted electronically in MS Word / Open Office / PDF file to Editorial Office through **Online Submission interface at: *http://ejournal.undip.ac.id/index.php/bcrec***. Author must read the author guidelines before submitting manuscript.

PUBLICATION INFORMATION

Bulletin of Chemical Reaction Engineering & Catalysis (ISSN 1978-2993)
Short journal title: ***Bull. Chem. React. Eng. Catal.***
Started from year 2013, 3 issues (Volume 7 Issue 3, and Volume 8 Issues 1-2) are scheduled for publication.

Bulletin of Chemical Reaction Engineering & Catalysis, BCREC, is electronically published via journal website (http://bcrec.undip.ac.id). The BCREC journal has been indexed and abstracted by Elsevier products (SCOPUS, Engineering Village/Compendex, EnCompassLit, and EMBASE) since 2011. Bulletin of Chemical Reaction Engineering & Catalysis has been ranked 25th or Q3 level in the world from Scimago Journal Ranking (http://scimagojr.com), SJR=0.348, by the subject category of Catalysis. The journal has also been ranked 19th or Q2 level by the subject category of Process Chemistry and Technology in Scimago Journal Ranking. This journal has also been ranked in Journal Metrics (*http://journalmetrics.com*) with SNIP impact factor of 0.905. This journal has been distributed by **EBSCO Publishing** started from Volume 4 Number 1 Year 2009 to present. The BCREC journal has been a CrossRef Member since 2012, so that all articles published by this journal have DOI unique numbers.

The BCREC journal has been published by Department of Chemical Engineering, Diponegoro University, jointly with *Masyarakat Katalis Indonesia*—Indonesian Catalyst Society (MKICS). Commencement of publication: January 2006

CITATIONS AND IMPACT FACTOR

* Impact Factor in Scimago Journal Ranking : SJR = 0.348
* Impact Factor in Journal Metrics : SNIP = 0.905
* h-index in Scimago Journal Ranking : 2
* Ranked in Scimago Catalysis category : 25th or Q3 level
* Ranked in Scimago Process and Chemistry Technology category : 19th or Q2 level

* SCOPUS ID : 19900191860
* SCOPUS h-index : 3
* Total articles published in SCOPUS : 47 articles (since 2011)
* Total Citations in SCOPUS : 35 citations (since 2011)

* Google Scholar h-index : 7
* Google Scholar i10-index : 3
* Total articles published in Google Scholar : 71 articles (since 2007)
* Total citations in Google Scholar : 154 citations (since 2007)

Available online at BCREC Website: http://bcrec.undip.ac.id

Bulletin of Chemical Reaction Engineering & Catalysis, 8 (2), 2013, iii

INDEXING AND ABSTRACTING

Bulletin of Chemical Reaction Engineering & Catalysis (ISSN 1978-2993) has been covered by following indexing services:

- CiteULike - (2012-.) (http://www.citeulike.org/user/bcrec/)
- Mendeley - (2012-.) (http://www.mendeley.com/profiles/bcrec-undip/)
- CrossRef - (2012-.) (http://www.crossref.org)
- Index Copernicus - (http://journals.indexcopernicus.com/masterlist.php?name=Master&litera=B&start=150&skok=30)
- CABI Direct - (2011-.) (http://www.cabdirect.org/)
- SCOPUS - Elsevier (2011-.) (http://www.info.scopus.com)
- Compendex - Elsevier (2011-.) (http://www.ei.org)
- EnCompassLit - Elsevier (2011-.) (http://www.ei.org/encompasslit_pat)
- EMBASE - Elsevier (2011-.) (http://www.info.embase.com)
- Engineering Village - Elsevier (2011-.) (http://www.ei.org)
- REAXYS - Elsevier (2011-.) (http://info.reaxys.com)
- SCIRUS - for scientific information (2010-.) (http://www.scirus.com/)
- Chemical Abstract Services - (2010-.) (http://www.cas.org), a division of American Chemical Society (ACS).
- EBSCOHOST - TOC Premier (2009-.) (http://search.ebscohost.com)
- EBSCOHOST - Energy & Power Source (2009-.) (http://search.ebscohost.com)
- EBSCOHOST - Academic Search Premier (2009-.) (http://search.ebscohost.com)
- EBSCOHOST - Academic Search Alumni Edition (2009-.) (http://search.ebscohost.com)
- EBSCOHOST - Academic Search R & D (2009-.) (http://search.ebscohost.com)
- EBSCOHOST - Academic Search Complete (2009-.) (http://search.ebscohost.com)
- Google Scholar - (2008-.) (http://scholar.google.com)
- Undip Institutional Repository (http://eprints.undip.ac.id)
- Portal Garuda DIKTI (http://garuda.dikti.go.id)
- Directory of Open Access Journal (DOAJ) (2009-.) (http://www.doaj.org)
- UlrichsWeb Global Serial Directory - (2009-.) (http://ulrichsweb.serialssolutions.com)
- OPEN J-GATE Open Access Journal Peer-Reviewed (http://www.openj-gate.com/browse/ByJournal.aspx?alpha=B)
- Academic Resources (http://www.ourglocal.com/journal/?issn=19782993)
- DMOZ Open Directory Project (http://www.dmoz.org/Science/Chemistry/Publications/Journals/)
- ResearchGATE - Scientific Network (https://www.researchgate.net/application.index.html)
- SOCOLAR, PR China (http://www.socolar.com)

For detail please visit BCREC website: http://ejournal.undip.ac.id/index.php/bcrec/pages/view/indexing
Online Submission interface at: http://ejournal.undip.ac.id/index.php/bcrec

Available online at BCREC Website: http://bcrec.undip.ac.id

Bulletin of Chemical Reaction Engineering & Catalysis, 8 (2), 2013, iv

PREFACE

BULLETIN OF CHEMICAL REACTION ENGINEERING & CATALYSIS (ISSN 1978-2993) is an electronic international journal. The journal is a media for communicating all research activities in chemical reaction engineering and catalysis fields, and disseminating the novel technology and news related to chemical reaction engineering, catalyst engineering and science, bioreactor engineering, membrane reactor, and catalytic reactor engineering.

This issue (BCREC, Volume 8, Issue 2, Year 2013) has published 10 articles with various topics including: biodiesel production using nano MgO catalyst, catalyst for oxidation of ethyl benzene, kinetics of enolization, catalyst for autothermal reforming reaction of methanol, reactor modeling of pilot scale vacuum gas oil hydrocracker, application of cement clinker as catalyst for glycerol reforming, photocatalyst of TiO_2 composites, application of factorial design of experiment, hydrogen production via glycerol dry reforming, and TS-1 catalyst for oxidation of catechol. In this issue, 28 authors and six countries were involved in authoring the articles, i.e. India, Taiwan, Indonesia, Malaysia, United States, and Iran.

Currently, the BCREC journal is an open access international journal. Readers can read and download any full-text articles for free of charge. **However, started from 2014 submission, Authors should pay some processing fees (US$100.00) for article processing and DOI maintenance once their articles has been accepted**. Authors may also pay some fees for the Ordered Original Reprint Articles with some eligible rates. The research articles submitted to the BCREC journal will be peer-reviewed by at least two reviewers. Accepted research articles will be available online following the journal peer-reviewing process as well as assigned to DOI number from CrossRef. Official language used in this journal is English.

Official website address of BCREC journal is: *http://bcrec.undip.ac.id*.

Editor would like to appreciate all researchers, academicians, industrial practitioners focused on chemical reaction engineering and catalysis to contribute to this online journal.

Assoc. Prof. Dr. I. Istadi (Editor-in-Chief)

Department of Chemical Engineering, Diponegoro University
E-mail: bcrec@undip.ac.id

Available online at BCREC Website: http://bcrec.undip.ac.id

Bulletin of Chemical Reaction Engineering & Catalysis, 8 (2), 2013, v

TABLE OF CONTENTS