SCOPE

Biotechnology and Bioprocess Engineering is an international bimonthly journal published by the Korean Society for Biotechnology and Bioengineering. BBE is devoted to the original and novel findings in the wide area of biotechnology and bioengineering. The editors appreciate contributions relevant to basic and applied research of biotechnology and bioengineering. Contributions are classified as Research Articles and Reviews. Manuscripts should report new and significant findings that advance the understanding of applied biology & biochemistry, molecular biology & biotechnology, biocatalysis & biotransformation, combinatorial chemistry, microbiology & metabolic engineering, pharmaceutics & biomaterials, bioprocess control & system engineering, bioseparation, biosensor & bioelectronics, cell culture engineering, environmental biotechnology, food technology, and nanobiotechnology.

ETHICAL GUIDELINE

BBE adopts the “Uniform Requirements for Manuscripts (URM)” (http://www.icmje.org) produced and updated by the International Committee of Medical Journal Editors (ICMJE).

TYPES OF MANUSCRIPTS

Research Articles are research reports of new findings. These papers should not exceed 30 double-spaced pages of text (not including the title and reference pages) and contain a precise description and interpretation of research. Reviews are critical assessments of relevant topics of contemporary interest. These papers should not exceed 60 double-spaced pages of text.

RESEARCH ARTICLES

Title Page

The title page of the article should be followed in the order of title, the authors’s name and affiliations and the full correspondence address including telephone, fax, e-mail, etc. The main title should be concise, descriptive and informative to the subject of manuscript and should not exceed more than 150 characters. The running title should be restricted to 50 characters.

Abstract and Keywords

Provide an abstract which states concisely the objectives and the results of the paper in not more than 250 words. It must be a brief and factual account of contents, conclusions, and relevance of the findings with an emphasis on what readers will gain from the manuscript. Do not cite any reference in the abstract. A list of 4-6 keywords for a subject index should be included on this page.

Text Body

(1) The recommended format and the capitalization styles of major headings are as follows: Abstract, Keywords, INTRODUCTION, MATERIALS AND METHODS, RESULTS AND DISCUSSION, CONCLUSION, Acknowledgements, NOMENCLATURE, REFERENCES.

(2) Leave a space between word and parenthesis. Special words of Latin or French origin should be in italic (e.g., in vitro, et al.).

(3) References to published work should be indicated at the appropriate place using brackets (e.g., [2,6-8]), numbered consecutively, and a list of references in numerical order should be provided at the end of the manuscript.

(4) Sources of materials and instruments should be clearly presented together with the names of the appropriate cities and countries.

(5) Units: The SI system should be used for all dimensional quantities. Leave a space between numbers and units except °C and % (e.g., 40 mg/L, 50%, 10 h).

(6) Equations and symbols: Main symbols used in equations and text should be in italic. Superscripts and subscripts should not (e.g., D_{eff}, k_{L}a, Y_{x/s}). Equations must be numbered consecutively using Arabic numbers.

(7) Tables: Type each table on a separate sheet of paper. The table title should have the first letter of the first word capitalized. Details of all necessary additional information can be included in the table footnotes. Preferred font is Arial or Times New Roman with 10 or 12 pt. Table should not contain vertical linings and the captions should be understandable without referring the text.

(8) Figures: Graphs, figures, and other illustrations should be drawn on separate sheets of paper. The uniformity in size of the figures should be maintained carefully. BBE encourages both gray and color illustration as TIFF/EPS files. Use 600 dpi/1200 dpi for illustrations for better clarity. When a figure consists of more than one plot, designate each plot as (A), (B), (C), etc. on the upper left-hand side of the plot and refer to it in the text as Fig. 4(A), Fig. 4(B), etc. All figures and lettering must be of a size which remain legible after a 50% reduction of the original. In the figure caption, only the first letter of the first word in each sentence should be capitalized. Photographs will be accepted if essential to the paper, though an additional charge will be levied. A list of figure cap-
tions including explanations of legends should be supplied on a separated sheet at the end of the manuscript.

(9) **Nomenclature:** Symbols used in the text or in equations should be collated and identified with definitions and dimensions. The SI system should be used for all dimensional quantities. Roman symbols are first listed alphabetically, followed by Greek symbols, superscripts, and subscripts.

**References**

All references in this list should be cited at some point in the text. Abbreviate the journal titles as in Chemical Abstracts or Biological Abstracts. References should be presented in the following style:

1. **Journal Articles**

2. **Books**

3. **Edited Books**

4. **Proceedings/Abstracts**

5. **Dissertations**

6. **Patents**

7. **Web URL**

**Note:** Manuscripts in which references are not in this format will be returned without review.

**REVIEWS**

Reviews are critical assessments of relevant topics of contemporary interest. Reviews should have a short title and descriptive subtitles. It should present novel ideas and interpretations of established observations. These papers should not exceed 60 double-spaced pages of text. Review articles are commissioned by the Editor and authors desire to submit review articles should consult with the Editor beforehand. Reviews should have a title page, abstract, and references in the same style as Research Articles. The main body should be sectioned at the author’s discretion.

**SUBMISSION OF MANUSCRIPTS**

Contributions are accepted on the understanding that the authors have obtained the necessary authority for publication. Submission of an article is understood to imply that the article is original and unpublished and is not being considered for publication elsewhere. All papers will be critically read by three reviewers who will be selected for their competence in the subject of matter of the paper.

BBE encourages the electronic submission of the manuscripts via on-line submission system (http://www.editorial-manager.com/bben). The cover letter for submission should include names and addresses of authors, the manuscript title, e-mail address and the phone/fax numbers of the corresponding author, and a brief statement upon the significance of the submitted article. Submitting manuscript can be supplied as an attached file, which is prepared by a popular word processor (Microsoft Word is recommended). Manuscripts should be typed double-spaced on A4 format. In addition, authors should provide a list of three potential reviewers (names/e-mail), none of whom should be affiliated with the authors’ institution(s).

**Page Costs**

Papers selected for publication in BBE are subject to a page charge of $50 per printed journal page, effective for manuscripts submitted after January 1, 2016.

**Color Charges**

Additional charges are assessed for color figures. Authors will be charged $150 per color figure.

**COPYRIGHT**

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all co-authors, if any, as well as – tacitly or explicitly – by the responsible authorities at the institution where the work was carried out. The author warrants that his/her contribution is original and that he/she has full power to make this grant. The author signs for and accepts responsibility for releasing this material on behalf of any and all co-authors. Transfer of copyright to the Korean Society for Biotechnology and Bioengineering.
and Springer becomes effective if and when the article is accepted for publication. After submission of the Copyright Transfer Statement signed by the corresponding author, changes of authorship or in the order of the authors listed will not be accepted by the Korean Society for Biotechnology and Bioengineering and Springer. The copyright covers the exclusive right (for U.S. government employees: to the extent transferable) to reproduce and distribute the article, including reprints, translations, photographic reproductions, microform, electronic form (offline, online) or other reproductions of similar nature.

An author may self-archive the English language version of his/her article on his/her own website and his/her institution’s knowledge is given to the original source of publication and a link must be accompanied by the following text: “The original publication is available at springerlink.com”.

All articles published in this journal are protected by copyright, which covers the exclusive right to reproduce and distribute the article (e.g., as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publishers. The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publishers can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special regulations for photocopies in the USA: Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. Tel.: +1-978-7508400, Fax: +1-978-6468600, http://www.copyright.com, stating the ISSN of the journal, the volume, and the first and last page numbers of each article copied. The copyright owner’s consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publishers.

**Subscription Information**

**ISSN print edition:** 1226-8372  
**ISSN electronic edition:** 1976-3816

Volume 20 (6 issues) will appear in 2015

**Subscription rates**

For information on subscription rates please contact:

**North and South America:**  
journals-ny@springer-sbm.com

**Outside North and South America:**  
subscriptions@springer.com

**Orders and inquiries:**

**North and South America:**  
Springer New York, Inc.  
Journal Fulfillment  
P.O. Box 2485  
Secaucus, NJ 07096 USA  
Tel: 1-800-SPRINGER or 1-201-348-4033  
Fax: 1-201-348-4505  
E-mail: journals-ny@springer.com

**Outside North and South America:**  
Springer Distribution Center  
Customer Service Journals  
Haberstr. 7  
69126 Heidelberg, Germany  
Tel: +49-6221-345-0, Fax: +49-6221-345-4229  
E-mail: subscriptions@springer.com

**Cancellations** must be received by September 30 to take effect at the end of the same year.

**Changes of address:** Allow for six weeks for all changes to become effective. All communications should include both old and new addresses (with postal codes) and should be accompanied by a mailing label from a recent issue. According to § 4 Sect. 3 of the German Postal Services Data Protection Regulations, if a subscriber’s address changes, the German Federal Post Office can inform the publisher of the new address even if the subscriber has not submitted a formal application for mail to be forwarded. Subscribers not in agreement with this procedure may send a written complaint to Customer Service Journals within 14 days of publication of this issue.

**Microform editions** are available from: ProQuest. Further information available at [http://www.il.proquest.com/uni](http://www.il.proquest.com/uni)

**Electronic edition**  
An electronic version is available at springerlink.com.

**Production**  
Printed in Korea

Springer-Verlag is part of Springer Science + Business Media.