

SILPAKORN UNIVERSITY
Science and Technology Journal
SUSTJ

Copyright All rights reserved. Apart from citations for the purposes of research, private study, or criticism and review, no part of this publication may be reproduced, stored or transmitted in any other form without prior written permission by the publisher.

Published by Archetype Co.,Ltd.

44/114 Soi Phaholyothin 52 Phaholyothin Road Klongthanon Saimai Bangkok 10220

©Silpakorn University ISSN 1905-9159

SILPAKORN UNIVERSITY

Science and Technology Journal

Editorial Office

Silpakorn University Research and Development Institute (SURDI), Silpakorn University,
Sanamchandra Palace Campus, Nakhon Pathom, Thailand

Editorial Policy

All articles submitted for publication will be evaluated by a group of distinguished reviewers.
The editorial board claims no responsibility for the contents or opinion
expressed by the authors of individual article.

Editorial Advisory Board

Prof. Amaret Bhumiratana, Ph.D

Department of Biotechnology, Mahidol University, Thailand

Prof. Geoffrey A. Cordell, Ph.D

Professor Emeritus, University of Illinois at Chicago, USA

Prof. Kanaya Shiginori, Ph.D

Department of Material and Life Sciences, Osaka University, Japan

Prof. Keiji Yamamoto, Ph.D

Graduate School of Pharmaceutical Sciences, Chiba University, Japan

Assist. Prof. Lerkiat Vongsarnpigoon, Ph.D

National Metal and Materials Technology Center (MTEC), Thailand

Assoc. Prof. Nijisiri Ruangrungsri, Ph.D

Department of Pharmacognosy, Chulalongkorn University, Thailand

Assoc. Prof. Petcharat Pongcharoensuk, Ph.D

Department of Pharmacy, Mahidol University, Thailand

Prof. Piyasan Praserttham, Ph.D

Department of Chemical Engineering, Chulalongkorn University, Thailand

Assoc. Prof. Supanee Chayabutra, Ph.D

Silpakorn University Research and Development Institute, Thailand

Assoc. Prof. Surachai Nimjirawath, Ph.D

Department of Chemistry, Silpakorn University, Thailand

Prof. Tharmmasak Sommartya, Ph.D

Faculty of Agriculture, Bangkok Campus, Kasetsart University, Thailand

Assoc. Prof. Vichai Korpraditskul, Ph.D

Faculty of Animal Sciences and Agricultural Technology, Silpakorn University, Thailand

Prof. Virulh Sa-Yakanit, Ph.D

Department of Physics, Silpakorn University, Thailand

Senior Editor

Assist. Prof. Maneepin Phromsuthirak, Ph.D

Editor of Silpakorn University International Journal (SUIJ)

Editor

Assoc. Prof. Onoomar (Poobrasert) Toyama, Ph.D

Faculty of Pharmacy, Silpakorn University

SILPAKORN UNIVERSITY

Science and Technology Journal

Editorial Board

Assist. Prof. Arunsri Leejeerajumnean, Ph.D

Faculty of Engineering and Industrial Technology, Silpakorn University

Assist. Prof. Boonsri Jongsareejit, Ph.D

Faculty of Science, Silpakorn University

Assist. Prof. Chockpisit Thepsithar, Ph.D

Faculty of Science, Silpakorn University

Chon Poo suwan, M.Sc.

Faculty of Animal Sciences and Agricultural Technology, Silpakorn University

Hunsa Nilapan, B.S.

Silpakorn University Research and Development Institute

Assoc. Prof. Mana Kanjanamaneesathian, M.Appl.Sc.

Faculty of Animal Sciences and Agricultural Technology, Silpakorn University

Assist. Prof. Panadda Phattanawasin, Ph.D

Faculty of Pharmacy, Silpakorn University

Assist. Prof. Pramote Khuwijitjaru, Ph.D

Faculty of Engineering and Industrial Technology, Silpakorn University

Agnes M. Rimando, Ph.D

U.S. Department of Agriculture, Agricultural Research Service, USA

Prof. Edward J. Kennelly, Ph.D

Lehman College and the Graduate Center, City University of New York, USA

Prof. Juan Boo Liang, Ph.D

Institute of Bioscience, Universiti Putra Malaysia, Malaysia

Prof. Shuji Adachi, Ph.D

Graduate School of Agriculture, Kyoto University, Japan

Vincenzo Esposito, Ph.D.

Department of Chemical Science and Technology, University of Rome "Tor Vergata", Italy

Managing Editor

Hunsa Nilapan

Silpakorn University Research and Development Institute (SURDI)

Periodicity

Twice yearly

All correspondence should be addressed to:

Managing Editor, SUSTJ, Silpakorn University Research and Development Institute,
Silpakorn University, Sanamchandra Palace Campus, Nakhon Pathom 73000, Thailand

Telephone: 66-3425-4066, 66-3425-9686 Fax: 66-3421-9013

E-mail address: hunsa@su.ac.th

Web site: <http://www.journal.su.ac.th>

Information about the Journal

An electronic journal is provided on the web site (<http://www.journal.su.ac.th>).

The journal is available at Silpakorn University Book Center. Telephone: 66-2223-7345, 66-2434-1792, and 66-3424-4054.

Instructions to Authors

Silpakorn University Science and Technology Journal (SUSTJ) is a journal published twice a year in June and December by the Research and Development Institute of Silpakorn University, Thailand. The journal is the Science and Technology version of the formerly *Silpakorn University International Journal (SUIJ)* which was first published in the year 2000. This new journal puts together articles in Science and Technology and aims to promote and distribute peer reviewed articles in the areas of science, health science, animal science, agriculture, engineering, technology and related fields. Articles from local and foreign researchers, invited articles and review from experts are welcome.

Types of contributions

Short communications, Research articles, Review articles, Case Studies

Preparation of manuscripts

1. The text should be double-spaced with line number on A4 and a font Times New Roman size 11 should be used. When using MS Word, insert all symbols by selecting "Insert-Symbol" from the menu and use the "Symbol" font.

2. Manuscripts should be organized in the following order:

Cover page with title and authors' names and affiliations

Abstract (in English and Thai)

Key Words

Introduction

Materials and Methods, Area Descriptions, Techniques

Results

Discussion

Conclusion

Acknowledgements

References

Tables and Figures

Authors' names and affiliations

Full names and affiliations (marked with superscript number) should be provided for all authors on the cover page, separately from the content. The corresponding author (marked with superscript asterisk) should also provide a full postal address, telephone and fax number and an e-mail address as a footnote on the title page.

Abstract

First page of the content starts with Abstract, including title of the article on top of page. Provide a short abstract not more than 200 words, summarizing the question being addressed and the findings.

Key Words

Provide 3-5 key words or short phrases in alphabetical order, suitable for indexing.

References

In text references: Refer to the author's name (without initials) and year of publication, e.g., Feldmann, 2004 (for 1 author), Feldmann and Langer, 2004 (for 2 authors), or Feldmann et al., 2004 (for more than 2 authors).

Article references: References should be listed in alphabetical order of author(s). For journal, list all names of authors.

Book

Feldmann, H. (2004) *Forty Years of FEBS*, Blackwell Publishing Ltd., Oxford.

Chapter in a book

Langer, T. and Neupert, W. (1994) Chaperoning mitochondrial biogenesis. In *The Biology of Heat Shock Proteins and Molecular Chaperones* (Morimoto, R. I., Tissieres, A. and Georgopoulos, C., eds.), pp.53-83. Cold Spring Harbor Laboratory Press, Plainview, New York.

Article in a journal

Hammerschlag, F. A., Bauchan, G., and Scorza, R. (1985) Regeneration of peach plants from callus derived from immature embryos. *Journal of Natural Products* 70(3): 248-251.

Hammerschlag, F. A., Bauchan, G., and Scorza, R. Regeneration of peach plants from callus derived from immature embryos. *Journal of Natural Products* (in press).

Article on the web

Lee, K. (1999) Appraising adaptive management. *Conservation Ecology* 3(2). [Online URL:www.consecolo.org/Journal/vol3/iss2/index.html] accessed on April 13, 2001.

Proceedings

MacKinnon, R. (2003) Modelling water uptake and soluble solids losses by puffed breakfast cereal immersed in water or milk. In *Proceedings of the Seventh International Congress on Engineering and Food*, Brighton, UK.

Patent

Yoshikawa, T. and Kawai, M. (2006) Security robot. U.S. Patent No. 2006079998.

Tables and Figures

Each Table and Figure must be on a separate page of the manuscript.

Tables: Number the tables according to their sequence in the text. The text should include references to all tables. Vertical lines should not be used to separate columns. Leave some extra space instead.

Figures: Figures should be of high quality (not less than 300 dpi JPEG or TIFF format), in black and white only, with the same size as the author would like them to appear in press. Choose the size of symbols and lettering so that the figures can be reduced to fit on a page or in a column.

Submission of Manuscripts

Authors should provide, on the cover letter, a statement verifying that the submitted manuscript has not been published or is being considered for publication elsewhere. All information contained in an article is full responsibility of the authors, including the accuracy of the data and resulting conclusion.

Authors are requested to send the manuscript on a diskette labeled with the authors' names and file names. The files should be prepared using MS Word only. Three copies of manuscript must be supplied.

The editorial office will acknowledge receipt of the manuscript within 2 weeks of submission. The 'accepted date' that appears in the published article will be the date when the managing editor receives the fully revised version of the manuscript.

The manuscript may be returned to authors for revision. Authors will be given 2 weeks after receipt of the reviewers' comments to revise the article.

Please submit the manuscript with a diskette to the following address:

Hunsa Nilapan
Silpakorn University Research and Development Institute
Silpakorn University, Sanamchandra Palace Campus
Nakhon-Pathom 73000

Proofs

Proofs will be sent to the corresponding author by e-mail (as PDF file) or regular mail. Author is requested to check the proofs and return any corrections within 2 weeks.



SUSTJ

Silpakorn University

Science and Technology Journal

Volume 2 Number 2 (July – December) 2008

C o n t e n t s

Research Articles

Some Biological Activities and Safety of Mineral Pitch	7
Thawatchai Phaechamud, Juree Charoenteeraboon, Penpun Wetwitayaklung, Chutima Limmatvapirat and Thaksin Srichan	
Evaluation of Native and Carboxymethyl Yam (<i>Dioscorea esculenta</i>) Starches as Tablet Disintegrants	18
Nattawat Nattapulwat, Narumol Purkkao and Ornamphai Suwithayapanth	
Masculinization of Flowerhorn by Immersion in Androgens	26
Somrudee Silarudee and Pawapol Kongchum	
Effect of Exogenous Methyl Jasmonate on Chilling Injury and Quality of Pineapple (<i>Ananas comosus</i> L.) cv. Pattavia	33
Phrutiya Nilprapruck, Noodjarin Pradisthakarn, Fonthip Authanithee and Pattharapong Keebjan	
Model of Degradation Kinetics for Coconut Oil at Various Heating Temperatures	43
Wibul Wongpoowarak, Wiwat Pichayakorn, Kwunchit Oungbho, Watcharakorn Boontaweesakul, Siriporn Sirivongmongkol and Prapaporn Boonme	
Acknowledgement to Referees 2007-2008	50
The Editorial Board	

**SUSTJ is now available on the following databases:
Thai Citation Index (TCI),
Directory of Open Access Journal (DOAJ),
International Information System for
the Agricultural Sciences and Technology (AGRIS).**