

Engineering, Life Sciences, Natural Sciences, Information Technology

Papua New Guinea

ISSN 1993-7687

JOURNAL
Of
SCIENCE,
TECHNOLOGY
And
ENGINEERING



Volume 1 Number 1 May 2007

Papua New Guinea Society of Scholars and Professionals

Journal of Science, Technology and Engineering

Edited by the Papua New Guinea Society of Scholars and Professionals
Published by VortexPNG LTD

The JOURNAL is open to all Scholars and Profession from Papua New Guinea (PNG) and the South Pacific (SP) and is devoted to the publication of original research, commentaries and letters concerning the sciences (life sciences and natural sciences), technology and engineering in PNG-SP

Editors

R. Itaki (University of Papua New Guinea)
V. Badira (Papua New Guinea University of Technology)

Notice to contributors:

Manuscripts for the journal should be sent directly to the following

Dr. Rodney Itaki
Department of International Medical Zoology
Faculty of Medicine
Kagawa University
Miki, Kita
Kagawa, 761-0793, JAPAN.
Email: ritaki@med.kagawa-u.ac.jp
Tel: +81-87-891-2122 Fax: +81-87-891-2122

Dr. Atul Raturi
Department of Applied Physics
University of Technology,
Lae,
Morobe Province 411
Papua New Guinea
Email: araturi@ap.unitech.ac.pg
Tel: +675 4734901

Mr. Varigini Badira
Department of Mechanical and Environmental Informatics
Graduate School of Information Science and Engineering
Tokyo Institute of Technology
2-12-1 O-okayama, Meguro-ku, Tokyo 152-8552, JAPAN
Email: vbadira@wv.mei.titech.ac.jp
Tel: +81-3-5734-3486 Fax: +81-3-5734-2650

Papua New Guinea:

PNG Society of Scholars and Professionals
Vortex PNG Ltd
P.O Box 969
Port Moresby
National Capital District

Full version of the journal is available on VortexPNG website (<http://www.vortexpng.com>)

Abbreviated key title: P.N.G.j.sci technol. eng

Copyright © The Papua New Guinea Society of Scholars and Professionals/VortexPNG LTD

To publish work done by members of the PNG-SP Academy of Science and Technology.
To promote scholarly communication between members of PNG-SP Academy of Science and Technology on science and technology matters.
To provide expert commentaries on matters of science and technology concerning PNG and SP.

INFORMATION FOR AUTHORS

Papua New Guinea JOURNAL OF SCIENCE, TECHNOLOGY AND ENGINEERING.

ISSN: 1993-7687

Publisher: VotexPNG LTD

Edited by: Papua New Guinea Society of Scholars and Professionals.

Scope: Papua New Guinea JOURNAL of SCIENCE, TECHNOLOGY And ENGINEERING is published quarterly by VortexPNG LTD and is dedicated to publishing original research, commentaries and letters concerning life sciences, natural sciences, technology and engineering in PNG and the South Pacific.

The journal covers these broad sections:

Life sciences: Clinical Medicine, Basic Medical Sciences – Anatomy, Physiology, Biochemistry, Pathology (which includes Immunology, Microbiology, Clinical Chemistry and Hematology). Natural sciences: Agriculture, Fisheries, Forestry Environmental Sciences, Oceanography, Geo-Sciences, Biology, Ecology and Chemistry. Information Technology, Engineering.

Criteria for publication:

Manuscripts have to be, as much as possible, in relevance to PNG and the SP. However, other manuscripts will be accepted based on its potential application to PNG and the SP.

PNG JSTC is published quarterly. Authors have to submit articles 2 months before an issue is made available (e.g. for publishing in the first quarter, articles have to be submitted before end of February). Later submissions will be published in the following issue. If circumstances permit, special volumes will be prepared.

Submission of manuscripts: Manuscripts must be of original research, commentaries or letters and must be submitted as attachment files via email direct to the editors. Life sciences and natural sciences manuscripts maybe submitted to Dr Rodney Itaki while technology and engineering manuscripts to be submitted to either Dr. Atul Raturi or Mr. Varigini Badira.

Manuscripts Formats.

Manuscript must be typed using Times New Roman or Arial Fonts. The main **Title** must be font size of 14pts. The rest of the manuscript must be typed with a standard font size of 12pts and single-spaced paragraphing. **Abstract** must have a maximum of 350 words with at least six **key words** appearing below the abstract, before the **Introduction**.

Tables must appear at the end of the reference page and appropriately referenced with in the manuscripts. Figures must be emailed as separate attachments. It is essential that a list of figure numbers and appropriate captions must be provided at the end of the manuscript. The figure list must be clearly titled as **Figure Captions**.

Citation: journals should be cited in the text should be the same way as in traditional journals (i.e. author, year). Books cited in text also in the same way. If a website is cited in text, the full URL must be given in the reference section.

Referencing: Same as in traditional journals i.e. journals – authors, article title, journal title, year; vol:issue: pp. Books – author(of book or chapter), chapter title, In book title, vol: edition, editor, publisher, year, pp.

References should be listed in the following style:

Singh P, Bengtsson L. 2004. Hydrological sensitivity of a large Himalayan basin to climate change. *Hydrological Processes* **18**: 2363-2385..

Hillel D. 1980. *In Applications of Soil Physics*. Academic Press: New York; 385.

Holster H. 1978. Mathematical modelling of tidal flats: a few remarks. *In Mathematical Modelling of Estuarine Physics*, Sundermann J, Holz KP (eds). Springer- Verlag: Berlin; 173-177.

If a website is referenced the title of the website plus the full URL should be given with the last date viewed in brackets. E.g PNG Society for Scholars and Professionals, www.vortexpng.com (last viewed 03-03-07).

Indexing and archiving: issues will be available on www.vortexpng.com and made into CDs for distribution.

Copyright: by submitting an article to PNGJSTE the authors declare that PNGJSTE will hold copyright to all articles published by the journal.

Abbreviated key title: P.N.G.j.sci technol. eng

Copyright © The Papua New Guinea Society of Scholars and Professionals/VortexPNG LTD

To publish work done by members of the PNG-SP Academy of Science and Technology.
To promote scholarly communication between members of PNG-SP Academy of Science and Technology on science and technology matters.
To provide expert commentaries on matters of science and technology concerning PNG and SP.