IIUM ENGINEERING JOURNAL

Volume 1 Number 1 2000



International Islamic University Malaysia

IIUM JOURNALS

Devoted to the Idea of Integration, Islamization, Internationalization, Comprehensive Excellence

INTELLECTUAL DISCOURSE

of the Kulliyyah of Islamic Revealed Knowledge and Human Sciences

HUM JOURNAL OF ECONOMICS AND MANAGEMENT

of the Kulliyyah of Economics and Management Sciences

IIUM LAW JOURNAL

of the Kulliyyah of Laws

IIUM ENGINEERING JOURNAL

of the Kulliyyah of Engineering

and

THE GOMBAK REVIEW

of the Department of English Language and Literature

also

AT-TAJDĪD

the University Journal in Arabic

All published by the Research Centre, IIUM twice a year

For further information please contact:

Research Centre

International Islamic University Malaysia Jalan Gombak, 53100 Kuala Lumpur

Tel: 603-20565006 Fax: 603-20564862

E-mail: rescentre@iiu.edu.my

ISSN 1511-788X



9 771511 788008

IIUM (INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA) ENGINEERING JOURNAL

EDITOR-IN-CHIEF

Prof. El-Sayed A. El-Badawy

EDITORIAL BOARD

- Abu Abdullah
- Adznan Bin Jantan
- Ahmad Faris Ismail

- Ahmed S. Ashour
- Sufyan Al-Irhayim
- Momoh Salami

INTERNATIONAL ADVISORY COMMITTEE

- Abdul Raouf, GIK Institute, Pakistan
- Amr Baz, U. of Maryland, USA
- Anwarul Azim, BUET, Bangladesh
- Ashraf Jawaid, Coventry U., UK
- Bassam Jubran, U. of Jordan, Jordan
- Ebrahim Mamdani, I.C, U. of London, UK
- Essamddin Badreddin, Mannheim U, Germany
- Jacques Lewiner, U. of Paris VI, ESPCI, France

- M. Mansour, ETH, Zurich, Switzerland
- Mohamed I Elmasry, U. of Waterloo, Canada
- Mohamed Kamel, U. of Waterloo, Canada
- Mohd Azman Shariffadeen, President and CEO, MIMOS, Malaysia
- Mohd Ridzuan B. Hj. Salleh, IIUM, Malaysia
- Mustafa Abushagur, U. of Alabama, USA
- Said I El-Khamy, U. of Alexandria, Egypt
- Shaker A. Meguid, U. of Toronto, Canada

AIMS & SCOPE OF HUM ENGINEERING JOURNAL

The IIUM Engineering Journal, published biannually, is a carefully refereed international publication of International Islamic University Malaysia (IIUM). Contributions of high technical merit are to span the breadth of engineering disciplines; they are to cover the main areas of engineering: Electrical and Computer Engineering; Mechanical and Manufacturing Engineering; Automation and Mechatronics Engineering; Material and Chemical Engineering; Environmental, and Civil Engineering; Biotechnology and Bio Engineering; Engineering Mathematics and Physics; and Computers Science and Information Technology. Contributions from other areas of Engineering and Applied Science are also welcome. The IIUM Engineering Journal publishes contributions under Regular papers, Invited review papers, Short communications, Technical notes, and Letters to the editor (no page charge). Book reviews, reports of and/or call for papers of conferences, symposiums and meetings, and advances in research equipment could also be published in IIUM Engineering Journal with minimum charges.

REFEREES NETWORK

All papers submitted to IIUM Engineering Journal will be subjected to a rigorous reviewing process through a worldwide network of specialized and competent referees. Each accepted paper should have at least two positive

SUBMISSION OF A MANUSCRIPT

An original and two copies of the manuscript should be sent to:

Editor-in-Chief, IIUM-Engineering Journal

Faculty of Engineering, International Islamic University Malaysia (IIUM),

Jalan Gombak, 53100 Kuala Lumpur, Malaysia.

Phone: (603) 2056 4506, Fax: (603) 2056 4853, email: iium-ej@iiu.edu.my

ISSN: 1511-788X

EDITOR-IN-CHIEF: Prof. El-Sayed A.	IIUM ENGINEERING JOURNAL
El-Badawy	A Biannually publication of the International Islamic University Malaysis
EDITORIAL BOARD	Vol. 1, No. 1, 2000
Abu Abdullah	
Adznan Bin Jantan	
Ahmad Faris Ismail	Articles
Ahmed S. Ashour	Computer Aided Design and Analysis of a 2-4 GHz Broadband
Momoh Salami	Balanced Microstrip Amplifier
Sufyan Al-Irhayim	S. H. Ibrahim
INTERNATIONAL	Stress Analysis of Polarization Maintaining Optical Fibers by the Finit Element Method
ADVISORY COMMITTEE	M. H. Aly, A. S. Farahat, M.S. Helmi, and M. Farhoud7
Abdul Raouf, Pakistan	A Proposed Method for Improving the Performance of P-Type GaAs IMPATTs
	H. A. El-Motaafy16
Amr Baz, USA	Analog Circuit Design Automation Tool Using Genetic Algorithms
Anwarul Azim, Bangladesh	Y. M. A. Khalifa and D. H Horrocks22
Ashraf Jawaid, UK	Numerical Investigation of Parameters Affecting the Thermal and Hydrodynamic Characteristics of Impinging Jets in Cross Flow
Bassam Jubran, Jordan	B. M. Suloiman and B. A. Jubran31
Ebrahim Mamdani, UK	High Speed Submarine Optical Fiber Communication System:Pressure and Temperature Effects
	A. A. Mohammed42
Essam Badreddin, Germany	Letter to the Editor
Jacques Lewiner, France	The Reformation of Calculus Courses at the International Islamic
M. Azzman Shariffadeen, Malaysia	University Malaysia A. S. Ashour55
M. Mansour, Switzerland	Announcement
Mohamed I Elmasry, Canada	First International Conference on Mechatronics
Mohamed Kamel, Canada	
Mohd Ridzuan B. Salleh, Malaysia	
Mustafa Abushagur, USA	
Said I El-Khamy, Egypt	
Shaker A. Meguid, Canada	