

DHAKA UNIVERSITY
JOURNAL OF APPLIED SCIENCE & ENGINEERING

Vol. 3, No. 1

January 2015

Editor

Prof. Dr. A.H.M. Asadul Huq

Dept. of Electrical and Electronic Engineering, University of Dhaka
Dhaka-1000, Bangladesh

Convener of the Editorial Council

Prof. Dr. Rafiqul Islam

Dean, Faculty of Engineering and Technology
University of Dhaka
Dhaka-1000, Bangladesh

Members of the Editorial Council

Prof. Dr. Khorshed Ahmad Kabir

Dept. of Nuclear Engineering
University of Dhaka
Dhaka-1000, Bangladesh

Prof. Dr. S.M. Mostafa Al Mamun

Dept. of Electrical and Electronic Engineering
University of Dhaka
Dhaka-1000, Bangladesh

Prof. Dr. Md. Abdul Quaiyyum

Dept. of Applied Chemistry and Chemical
Engineering
University of Dhaka
Dhaka-1000, Bangladesh

Prof. Dr. A M Sarwaruddin Chowdhury

Dept. of Applied Chemistry and Chemical Engineering
University of Dhaka
Dhaka-1000, Bangladesh

Prof. Dr. Md. Rezaul Karim

Dept. of Computer Science and Engineering
University of Dhaka
Dhaka-1000, Bangladesh

Prof. Dr. Md. Hasanuzzaman

Dept. of Computer Science and Engineering
University of Dhaka
Dhaka-1000, Bangladesh

CONTENTS

01.	Analysis of Theoretical Efficiencies of GaInP₂/GaAs/Ge Multijunction Solar Cell	1
	<i>Abu Kowsar, Md Abul Hossion, Md Sofikul Islam, Afrina Sharmin and Zahid Hasan Mahmood</i>	
02.	Study on the Effect of Bi₂O₃ Additive on the Microstructure, Structural and Magnetic Properties of Ni_{0.35}Cu_{0.15}Zn_{0.5} Ferrite Sintered at 1100⁰C	7
	<i>Md. Fazlul Huq, D. K. Saha and Zahid Hasan Mahmood</i>	
03.	Studies on the Application of Statistical Design to <i>tert.</i>-Methylcyclohexylation of <i>m</i>-Cresol in the Presence of Perchloric Acid	15
	<i>Md. Shahruzzaman, Suvanker Saha and Dipti Saha</i>	
04.	A Statistical Study of <i>tert.</i>-Methylcyclohexylation of <i>O</i>-Cresol	23
	<i>Md. Shahruzzaman, Suvanker Saha and Dipti Saha</i>	
05.	Alkylation of <i>p</i>-chlorophenol with olefins in the presence of perchloric acid	31
	<i>Mohammad Kamruzzaman and Manoranjan Saha</i>	
06.	Studies on the physico-chemical properties, lipids, glycerides and fatty acid composition of mesta (<i>Hibiscus cannabinus</i> Linn) seed oil	35
	<i>A. Akhter, M. M. Rahman, M. M. M. Morshed, M. Ismail and M. Saiful Islam</i>	
07.	A Novel Dynamic Edit Distance based Algorithm for Protein-Protein Interaction Prediction	39
	<i>Md. Abdul Wadud Akanda and Saifuddin Md. Tareeq</i>	
08.	Continuous No-Reference Stereoscopic Video Quality Prediction	47
	<i>Z. M. Parvez Sazzad</i>	
09.	ACM: An Efficient Exact Algorithm for Finding Planted Motif in Biological Sequences.	55
	<i>S. M. Iqbal Morshed and Saifuddin Md. Tareeq</i>	
10.	NECAMO - New Evolutionary Clustering Algorithm using Multiobjective Optimization	61
	<i>Md. Shiplu Hawlader, Kaynat Quayyum and Saifuddin Md. Tareeq</i>	
11.	Implementation of statistical technique in knitting fabric of predetermined GSM and finished width: A pragmatic approach	69
	<i>Mohammad Bayejid Istiaque, Mohammad Sakhawat Hossain and Ashikur Rahman</i>	
12.	Reconstruction of Gene Regulatory Networks Using Hybrid Evolutionary Algorithm	77
	<i>Arup Kumar Sarker and Saifuddin Md. Tareeq</i>	
13.	Isolation of Lupeol from <i>Terminalia arjuna</i> Bark	87
	<i>Israt Zahan Noor, Ajoy Kumar Das, Taslima Ferdous and Mohammad Nurnabi</i>	
14.	Photocatalytic Degradation of Brown CGG Dye using Chemically Synthesized ZnO Nanoparticles	91
	<i>A.S.M. Asfaqueel Islam, Taslima Ferdous and Ajoy Kumar Das</i>	
15.	Automatic Image Quality Evaluation Method for Efficient Usage of Storage for Media Content	97
	<i>Munira Sultana and Z. M. Parvez Sazzad</i>	
16.	Comparison between LMS & NLMS Algorithms in Adaptive Noise Cancellation for Speech Enhancement	107
	<i>Md. Faisal Rahman and A. H. M. Asadul Huq</i>	
17.	SKnot: A Novel Heuristic Algorithm for RNA Secondary Structure Prediction Including Pseudoknots	113
	<i>Shantanu Saha and Saifuddin Md. Tareeq</i>	

GENERAL INFORMATION

Publication: Dhaka University Journal of Applied Science and Engineering is published half-yearly in January and July as two issues per annual volume.

Subscription Information: Subscription price per issue is Tk. 100.00 (inland)/US\$ 15.00 (foreign). Subscription orders should be sent to: Dhaka University Journal of Applied Science and Engineering, Dean office, Faculty of Engineering and Technology, Gurzon Hall campus, Dhaka University, Dhaka-1000, Bangladesh.

Editorial Correspondence: Editorial correspondences should be addressed to Editor, Dhaka University Journal of Applied Science and Engineering, Dean Office, Faculty of Engineering and Technology, Gurzon Hall campus, Dhaka University, Dhaka-1000, Bangladesh.

INFORMATION FOR AUTHORS

Scope: Dhaka University Journal of Applied Science and Engineering publishes original research papers and short communications submitted by the teachers and researchers of the University of Dhaka from any area of applied science, engineering and technology. In the case of joint authorship of a paper, one of the authors must be from University of Dhaka.

Form of Manuscript: Manuscript must be **typed with double spacing** (font size 11) on one side of A4 (210 mm x 297 mm) white papers with margins. The first page of the typescript should contain title of the article, name(s) of the author(s) with academic or professional affiliation(s) and in case of joint authorship the address of the author to whom communications should be made. A title, **not exceeding 50 characters**, should be provided for page headings. The title page should be followed by a page containing only the full title and in case of a full paper, an abstract of up to **150 words** briefly pointing out materials, methodology and main results. No abstract is necessary for short a communication. Contributions should be as concise as possible, and must not exceed **ten typed pages in the case of full papers and two typed pages** in the case of short communications. Tables, graphs and figures should be kept to minimum. Tables of data represented by graphs should not be included unless they are absolutely necessary. Footnotes should be avoided as far as possible. **Soft copy in MS Word/Latex** must be supplied with the final manuscript.

References: All references must be numbered consecutively according to their occurrences in the text. Reference citations in the text should be indicated by square brackets, e.g., [1, 4, 5], and included in a numbered reference list at the end according to the following style:

For a paper in a journal: Alam, M.S. and M.D. Tokhi, 2008, "Dynamic modeling of a twin motor system: a genetic algorithm optimization approach", The Dhaka University J. of Sci. 56(2), pp 183-187.

For a book: Chani, A., 2003, "Medicinal plants of Bangladesh" 2nd ed, Asiatic Society of Bangladesh, Dhaka-1000, pp 69-70.

For a paper in a contributed volume: Zadeh, I.A., 1974, "Calculus of Fuzzy restrictions", In: I. A. Zadeh, K.S., Fu, K. Tanaka and M. Shimura (ed), Fuzzy sets and their applications to cognitive and decision processes, Academic Press, NY.

Submission of Manuscript: Authors should submit two copies of the manuscripts to the editor following the style and format of the journal. The author(s), at the time of submitting their manuscript, must certify that the work was carried out by the author(s) and the contents of the manuscript were not published before or submitted for publication in any other journal. In order to assist the referees, authors are requested to furnish copies of relevant **unpublished** or inaccessible references.

Editorial Process: All papers will be refereed. The editor will process the paper in consultation with the department member of the editorial board, and the authors may be required to incorporate necessary changes as suggested by the referees. Final decisions on the papers will be made by the editorial board on the basis of the reports of the referees.

Proofs: Authors will receive page-proofs, which should be corrected and returned within seventy two hours of receipt. No new material may be inserted in the text at the time of proof reading, except where permission in advance has been obtained from the editor.

Offprints: Fifteen offprints of each paper, or short communication, published in the journal will be supplied free of charge. Additional offprints may be ordered at cost price at the time of returning the corrected page-proofs.

Submission Fee: For each paper, total Tk. 1000 is required to pay during submission if any author/authors are affiliated to Dhaka University. However, if none of them is affiliated to Dhaka University, the amount will be Tk. 1500 for the same.

Payment may be made in cash to Journal office or to bank account No. 0961233006897 (Account Name: D.U. Journal of App. Sc. & Engineering) Agrani Bank Limited, Dhaka University Branch, Dhaka.