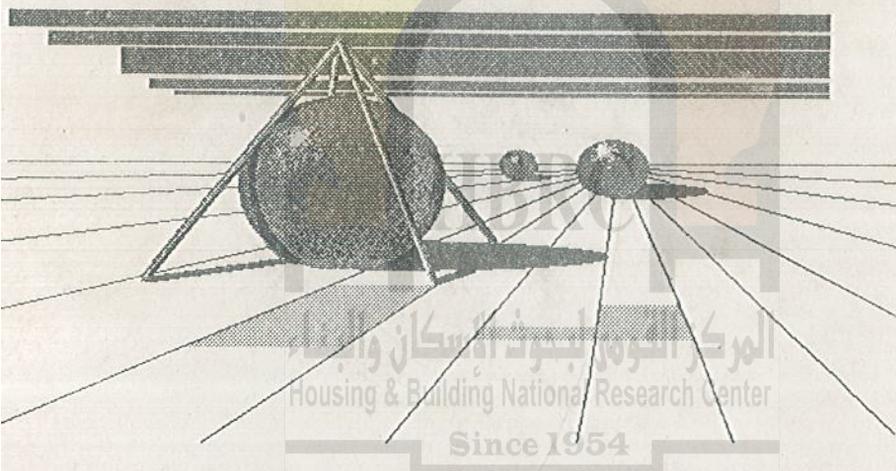


Sci. Bull. Fac. Eng. Ain Shams Univ.  
ISSN 1110 - 1385



AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING



## SCIENTIFIC BULLETIN

**Vol. 31, No. 4, December. 30, 1996**  
**Part II : *Electrical and Mechanical Engineering***  
***Physics and Mathematics***

٢٧٢٨

Sci Bull Fac. Eng. Ain Shams Univ.  
ISSN 1110-1385

٢



AIN SHAMS UNIVERSITY

Scientific Bulletin  
of

The Faculty of Engineering

المركز القومي لبحوث الإسكان والبناء  
Housing & Building National Research Center

Since 1954

عبد الوهاب

المكتبة  
31/7/1997

AIN SHAMS UNIVERSITY  
FACULTY OF ENGINEERING

SCIENTIFIC BULLETIN

EDITORIAL BOARD

- 1- Prof. Mohamed Abdel-Hamid Sheirah (Chief Editor)
- 2- Prof. Ali Mohamad Talaat (Co\_Editor)
- 3- Prof. Mohamed El-Niazi Hamad
- 4- Prof. Salah El-Din Mohamed El-Mahdy
- 5- Prof. Saad Kamel Massoud
- 6- Prof. Ali Kamel El-Kharashi
- 7- Prof. Abdel-Hady Hosny Hassan
- 8- Prof. Mohamed Zaki Hawas

Prices Per Volume excluding mail postage:

Individuals:	Egypt	Overseas
Authors	20 LE	20 US \$
Non-Authors	35 LE	35 US \$
Societies:	90 LE	90 US \$

Faculty of Engineering  
Post Office 11517, Abbassia  
Cairo, Egypt

Tel : (202) 2826636/7  
Telex : 94070 USHAMS U  
Fax : (202) 285-0617

## GUIDE FOR THE PREPARATION OF MANUSCRIPTS TO PROSPECTIVE AUTHORS FOR THE SCIENTIFIC BULLETIN

### A- OBJECTIVES

The Bulletin aims at the development of knowledge in the field of engineering, technology and related sciences. All innovative, valuable and useful articles as research or review papers or reports will be regarded. In order to guarantee the highest possible standard, the received articles are rigorously refereed. However, articles that have been published before or which were submitted for publication in another magazine will not be considered.

### B- GUIDELINES

1. **Language** : English or Arabic
2. **Typescript** : The complete paper should be camera-ready, laser-typed, single-sided with double-line spacing, five-space paragraph indentation, on standard A4 size paper. The Times New Roman is the preferred font for use. 25 mm margin is to be left on the four sides of the page.
3. **Number of copies** : For the purposes of refereeing and editing, the original and three copies of the paper are required. The referees will receive unidentified copies.
4. **Length** : The fee will account for a maximum of 15 pages. Additional pages are charged as per page. All pages must be numbered.

### C- CONTENTS

The first page of the article should include :

- A title consisting of a maximum of 10 words in bold capital letters (18 pt font) and centered.
- The authors names (14 pt font) followed by their affiliations and present addresses should be centered under the title.
- Indexing terms (12 pt font) containing a maximum of six key words indicating the area of the paper.

## Table of Contents

- An abstract of not more than 100 words (14 pt font) in the same language of the text to give the summary of the main contents of the paper. This should give a clear and concise view of the state-of-the-art and motivation of the subject, an outline of the paper and its contribution. The abstract should not include any references.
- A translation in the other language.  
The following pages should include :
- A list of the used symbols, acronyms, etc.
- An introduction explaining the nature of the study, previous work, purpose and contribution of the paper.
- The text of the article suitably itemized.
- Conclusions indicating advantages, limitations and possible applications.
- Mathematical equations typewritten leaving double-spaces on either side and using the SI units.
- Drawing computer- designed made using India ink on transparent or white paper. Lettering must be typewritten or written by template.
- Tables should be typewritten in serial with clear headlines and should not be a repetition of any information that has appeared somewhere else in the article.

## PART I

## Architecture and Civil Engineering

	Page
1. Towards A Simplified and Rational Design for Reinforced Concrete Colmns Ayman A.A Embaby.....	1
2. Study of Plate Bending Element Suitable for Thick and Thin Plates Moustafa k. Zidan, Abdel Salam A. Mokhtar, Samir A. Hekal & Yasser Galal	19
3. Unified Theory for the Design of Pile Caps Salah El-Din Fahmy Taher, Mohamed Ahmed Dabaon & Fahmy Abd-El-Fatah Zaher.....	41
4. Effect of Distribution and Stiffness of Stays on Static Behaviour of Cable-stayed Bridges Kamal Hassan, Mohamed N. Fayed, Sherif K. Hassan & hany W. Gourgui.....	63
5. Wind Response of Nonlinear Structures Using Energy Method M. M. H. Attabi, M. N. Fayed.....	90
6. Assessment of Potentiality of Travel Demand Management in Relieving Traffic Congestion in Cairo: A Case Study with Car users in Affluent Districts Khaled abbas, Osama Okail & Ibrahim Mabrouk.....	115
7. Analysis of Infiltrated Water From Trickle Irrigation By Finite Element Method Tarek A. Saafan.....	147
8. Flow Characteristics of Vegetated Channels Tarek A. El-Samman, Ali M. Talaat, Mahmoud A. Mohamed, Ahmed F. Khattab & Mohamed El-Niazi Aly.....	161
9. Double Diffusive Natural Convection in An Enclosure J. Rasoul, Yehia K. Abdel-Monim.....	174
10. Effect of Prandtl Number on natural Convection in A Square Cavity J. Rasoul, Yehia K. Abdel-Monim.....	187
11. Design of Stable Channels Farouk M. Abdel-Aal.....	200
12. River Navigation Farouk M. Abdel-Aal.....	209
13. Coastal Changes at Inlets Abd El-Fattah El-Fiky, Sonia El-Serafy, Abd El-Mohsen El-Mongy & Mootaz Khaled.....	219
14. Characteristics of Free Hydraulic Jump Downstream Silled Sluice Gate In Sloping Channels Osama K. Saleh and G.M.M Abdel-Aal.....	231
15. Influence of Hump Removal on Scour Hole Characteristics Downstream Regulator Structure Kassem Salah Abd Wahab El-alfy.....	243
16. Effect of Different Ways of Protection on Scour Development Nahla AbouelAtta . Soheir M. Kamel.....	258

## PART II

## Electrical and Mechanical Engineering, Physics and Mathematics

17. Processor Synchronization and Memory Interleaving in Decoupled Architectures Salma Abdel-Kader Ghoneim.....	270
18. A Model For An Object-Oriented Database Management System Hany M. Harb, M. Rafea & A. M. Al-Metwally.....	293
19. Real-Time Scheduler for an Automated Industrial Environment Y. H. Dakroury & K. M. Nabil.....	309
20. Implementation of A Bandwidth Balancing Mechanism for DQDB Network With Modified Protocol Sayed Abd-El-hadi Nouh.....	324
21. A Call Admission Control Strategy with Constraint Peak-Rates for VBR Video Traffic in ATM Networks	339

HBRC

المركز القومي لبحوث الإسكان والبناء  
Housing & Building National Research Centre

Since 1954