



**University of Engineering and Technology, Lahore**

**EDITORIAL BOARD**

**Muhammad Akram**

*Chief Editor*

UET Lahore. Pakistan

**John Pilling**

Michigan Tech University, USA

**Xiu Feng Han**

University of Beijing, China

**S. Thangam**

Steven Institute of Tech., Hoboken, New Jersey, USA.

**Thomas B. Fischer**

School of Environment Sc. University of Liverpool, UK

**Ikuuo Towhata**

Geotechnical Engineering, Japan

**Imran Muhammad**

Environment & Planning Massey Univ., New Zealand

**Mahmood H. Nagrial**

UWS Australian

**Sohail Ahmad Rai**

Murray Darling Basin Aukland Canberra, Australia

**Ichiro Hagiwara**

Inst. For Advanced Study of Mathematical Sc., Tokyo

**Muhammad Usman**

Fellow Scientist & Vice President of Engineering  
Masimo

**Bijan Shirinzadeh**

Monash University, Australia

**Arshad Saleem Bahtti**

COMSAT, Islamabad

**Mazhar Mahmoo**

PIEAS, Islamabad

**Asim Loan**

Managing Editor,

UET Lahore. Pakistan

**Haroon Babri**

UET Lahore. Pakistan

**Habib-ur-Rehman**

UET Lahore, Pakistan

**Muhammad Pervaiz Mughal**

UET Lahore, Pakistan

**Rizwan Hameed**

UET, Lahore, Pakistan.

**Fida Younas Khattak**

Kohat University of Sc., and Tech., Kohat

**Younas Jamal**

UET, Lahore, Pakistan

**Noor Muhammad Khan**

UET Lahore, Pakistan

**Asif Ali Qaiser**

UET, Lahore, Pakistan

**Ihtzaz Qamar**

IST, Islamabad

**Rizwan Gul**

UET, Peshawar

**Atif Anwar Chaudhry**

COMSAT, Lahore

**Sabieh Anwar**

Department of Physics, LUMS Lahore

**Hafeez Memon**

MUET, Jamshoro

This Journal is a Publication of the University of Engineering and Technology, Lahore. It includes research papers based on the work undertaken by Engineers and Scientists in the fields of Engineering, Applied Sciences, Architecture, Urban Planning, Computer Technology and other Allied subjects.

**Abstracting Service:** Ulrich's periodicals Directory  
(www.ulrichsweb.com)

**Subscription Charges:** Local Rs.500 per copy (Plus postage)  
International \$ 15.00 (Plus postage)

**Publisher:** Caxton Printing Press. 14-Abbot Road, Lahore  
(caxton\_press@yahoo.com) 0300-8445101

Declared Authenticated vide DM Lahore No. PCPB/1396 dated 9.7.1986 as  
UET Research Journal