# JOURNAL OF ENGINEERING

### **College of Engineering**

### **University of Baghdad**

### **Editorial Board**

Chief Editor						
Prof Dr. Basma Abbas	College of Engineering	University of Baghdad				
Abdulmajeed						
Managing Editor						
Asst. Prof Dr. Ammar A. Farhan						
Members						
Prof Riadh Saleh Al-	Dept. of Civil	Swinburne University of				
Mahaidi	Engineering	Technology				
Associate Prof Nader	Dept. of Mining and	Amirkabir University of				
Parvin	Metallurgy	Technology, Tehran				
		Polytechnique				
Prof Dr. Zainab Ziad	Dept. of Environmental	University of Baghdad				
Ismail	Engineering	College of Engineering				
Prof Dr. Bushra Suhale	Dept. of Civil	University of Baghdad				
Zbar	Engineering	College of Engineering				
Asst. Prof Dr. Inaam	Dept. of Architecture	University of Baghdad				
Ameen Albazzaz	Engineering	College of Engineering				
Asst. Prof Dr. Sameera	Dept. of Petroleum	University of Baghdad				
M. Hamad-Allah	Engineering	College of Engineering				
Asst. Prof Dr. Firas	Dept. of Electrical	University of Baghdad				
Mohammed Tuaimah	Engineering	College of Engineering				
Asst. Prof Dr. Nadia	Dept. of Computer	University of Baghdad				
Adnan Shiltagh	Engineering	College of Engineering				
Asst. Prof Dr. Issam	Dept. of Energy	University of Baghdad				
Mohammed Ali Aljubury	Engineering	College of Engineering				
Asst. Prof Dr. Maythm	Dept. of Surveying	University of Baghdad				
M. Sharky	Engineering	College of Engineering				

## **Scientific Consultant Committee**

	Members		
Prof Dr. Saba Jabbar Neamah	College of Engineering	University of Baghdad	
Al khafaji			
Prof. Dr.Saleem Mohammed	College of Engineering	University of Baghdad	
Ridha Ali Taha			
Prof.Dr.Ala Nasir ALjorany	College of Engineering	University of Baghdad	
Prof.Dr.Yasin Khdear Salman	College of Engineering	University of Baghdad	
Prof. Dr. Hussein Yousif Mahmood	College of Engineering	University of Baghdad	
	College of Engineering	University of Deah ded	
Prof. Dr. Riyadh Zuhair Al Zubaidy	College of Engineering	University of Baghdad	
Prof Dr. Raad Sami Fyath	College of Engineering	Al – Nahrin University	
Prof Dr. Shihab Ahmed Shamma	School of Engineering	University of Maryland	
Prof Dr. Qassim Nasir	College of Engineering	Sharjah University	
Prof Dr. Marwan Suliman Mousa	Dep. Of Physics	Mu'tah University	
Prof Dr. Eyad Hassan Abed	Department of	University of Maryland	
	Electrical and		
Duef Due Hannau Al Maria	Ciril Fran Dant	T:	
Prof Dr. Hassan Al-Nageim	Civil Eng. Dept.	Liverpool John Moores University	
Prof Dr. Taju alarifin Bin		University of	
Musa		Technology- Malaysia	
Prof Dr. Elamin Alkanzi	Chemical Eng. Dept.	University of Bahrain	

Staff of the Jour	nal
Rafel M. Ali	
Roaa Ahmed Kadhim	