

# C O M M U N I C A T I O N S

FACULTY OF SCIENCES  
UNIVERSITY OF ANKARA

DE LA FACULTE DES SCIENCES  
DE L'UNIVERSITE D'ANKARA

Series A2-A3: Physical Sciences and Engineering

---

**VOLUME: 63**

**Number: 2**

**YEAR: 2021**

---

Faculty of Sciences, Ankara University  
06100 Beşevler, Ankara-Turkey  
ISSN 1303-6009 E-ISSN 2618-6462

# C O M M U N I C A T I O N S

FACULTY OF SCIENCES  
UNIVERSITY OF ANKARA

DE LA FACULTE DES SCIENCES  
DE L'UNIVERSITE D'ANKARA

Series A2-A3: Physical Sciences and Engineering

**Volume: 63**

**Number: 2**

**Year: 2021**

## Owner

Sait HALICIOĞLU, Dean of Faculty of Sciences

## Editor in Chief

Fatma KARAKOÇ

## Managing Editor

Şengül KURU

## Area Editors

İnanç ŞAHİN (Physics) Ankara University, Turkey	İman ASKERZADE (Askerbeyli) (Computer Eng.) Ankara University, Turkey
Tülay SERİN (Engineering Physics) Ankara University, Turkey	Ziya TELATAR (Electronic Eng.) Ankara University, Turkey
H. Volkan ŞENAVCI (Astronomy) Ankara University, Turkey	M. Emin CANDANSAYAR (Geophysical Eng.) Ankara University, Turkey

## Editors

Ramiz ALIGULIYEV ANAS, Azerbaijan Murat EFE Ankara University, Turkey	Gabriela CIUPRINA Politehnica University of Bucharest, Romania Osman EROGLU TOBB Economy and Tech. Uni., Turkey	Sara CRUZ Y CRUZ SEPI-UPIITA IPN, Mexico H. Gokhan ILK Ankara University, Turkey
Mustafa E. KAMASAK Istanbul Technical University, Turkey	İlhan KOSALAY Ankara University, Turkey	İsa NAVRUZ Ankara University, Turkey
Javier NEGRO Univesidad de Valladolid, Spain	Roy L. STREIT Uni. of Massachusetts at Dartmouth, USA	Hakan TORA Atılım University, Turkey
Miroslav VOZNAK VŠB – Tech.Uni. of Ostrava, Czech Republic	Emre YENGEL King Abdullah Uni. of Sci. and Tech., Saudi Arabia	A. Egemen YILMAZ Ankara University, Turkey
Kutluay YUCE Ankara University, Turkey		

This Journal is published two issues in a year by the Faculty of Sciences, University of Ankara. Articles and any other material published in this journal represent the opinions of the author(s) and should not be construed to reflect the opinions of the Editor(s) and the Publisher(s).

## Correspondence Address:

COMMUNICATIONS  
EDITORIAL OFFICE  
Ankara University, Faculty of Sciences,  
06100 Tandoğan, ANKARA – TURKEY  
**Tel: (90) 312-212 67 20 Fax: (90) 312-223 23 95**  
e-mail: [commun@science.ankara.edu.tr](mailto:commun@science.ankara.edu.tr)  
<http://communications.science.ankara.edu.tr/index.php?series=A2A3>

## Print:

Ankara University Press  
İncitaş Sokak No:10 06510 Beşevler  
ANKARA – TURKEY

# C O M M U N I C A T I O N S

FACULTY OF SCIENCES  
UNIVERSITY OF ANKARA

DE LA FACULTE DES SCIENCES  
DE L'UNIVERSITE D'ANKARA

Series A2-A3: Physical Sciences and Engineering

**Volume: 63**

**Number: 2**

**Year: 2021**

---

## **Research Articles**

---

B. ÇUHADAROĞLU, H.G. İLK, Design and implementation of a low cost, high performance ionizing radiation source detection and source direction finding system .....	93
Ö. DAGLI, E. BOSTANCI, Ö.H. EMMEZ, G. KURT, F. EKİNCİ, M.S. GÜZEL, Geant4 based dosimetry evaluation for gamma knife using different phantom materials.....	118
S. CAN, G. SOYSAL, Estimating the frequency and bandwidth of square-split ring resonator (S-SRR) designs via support vector machines (SVM) .....	127