

## Prof. MUSTAFA POLAT

### Personal Information

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### Education Information

Doctorate, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği, Turkey 1995 - 2000

Post Graduate, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği, Turkey 1993 - 1995

Under Graduate, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği, Turkey 1986 - 1991

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, Işınlama ile bazı gıdalarda oluşan kökçelerin spektroskopik özelliklerinin incelenmesi ve bu gıdaların dozimetrik potansiyellerinin belirlenmesi, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2000

Post Graduate, Işınlanmış tavuk etlerinde ESR yöntemi ile doz belirlenmesi, Hacettepe Üniversitesi, Fen Bilimleri Enstitüsü, Fizik Mühendisliği, 1995

### Research Areas

Physics, Atomic and Molecular Physics, Atomic and Molecular Interactions, Natural Sciences

### Academic Titles / Tasks

Professor, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2010 - Continues

Associate Professor, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2004 - 2010

Lecturer, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2003 - 2004

Research Assistant, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 1994 - 2003

### Courses

FİZİK II, Under Graduate, 2018 - 2019

Elektromanyetik Teori, Post Graduate, 2018 - 2019

İstatistik Fizik Lab., Under Graduate, 2018 - 2019

Mezuniyet Projesi, Under Graduate, 2016 - 2017

Kuantum Laboratuvarı, Under Graduate, 2016 - 2017

FİZİK I, Under Graduate, 2016 - 2017

## Advising Theses

POLAT M., Glukoz, fraktoz ve galaktozun radyasyon doz ölçümünde kullanılabilirliklerinin elektron spin rezonans (ESR) ile incelenmesi, Post Graduate, F.ÖZSAYIN(Student), 2012

POLAT M., Potasyum tartarat ve Potasyum sitrat örneklerinin elektron spin rezonans(ESR) tekniği kullanılarak dozimetrik özelliklerinin incelenmesi, Post Graduate, G.KORKMAZ(Student), 2010

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **ESR investigation on the potential use of potassium citrate as a dosimeter material**  
KORKMAZ G., DİLAVER M., POLAT M.  
APPLIED RADIATION AND ISOTOPES, vol.153, 2019 (Journal Indexed in SCI)
- II. **ESR detection of irradiated carob pods (*Ceratonia siliqua* L) and its dosimetric feature**  
Tuner H., POLAT M.  
RADIATION PHYSICS AND CHEMISTRY, vol.141, pp.196-199, 2017 (Journal Indexed in SCI)
- III. **The ESR dosimetric features of strontium sulfate and temperature effects on radiation-induced signals**  
ACAR A. O. , POLAT M., AYDIN T., AYDAŞ C.  
RADIATION PHYSICS AND CHEMISTRY, vol.123, pp.31-36, 2016 (Journal Indexed in SCI)
- IV. **Investigation of free radical formation in human lymphocyte, leukemia, breast fibroblast and breast adenocarcinoma cell cultures after radio frequency exposure using electron spin resonance**  
Cam S. T. , EŞMEKAYA M. A. , POLAT M., CANSEVEN KURŞUN A. G. , Seyhan N.  
INDIAN JOURNAL OF BIOCHEMISTRY & BIOPHYSICS, vol.53, pp.7-11, 2016 (Journal Indexed in SCI)
- V. **Tea extracts protect normal lymphocytes but not leukemia cells from UV radiation-induced ROS production: An EPR spin trap study**  
Cam S. T. , POLAT M., Esmekaya M. A. , Canseven A. G. , Seyhan N.  
INTERNATIONAL JOURNAL OF RADIATION BIOLOGY, vol.91, no.8, pp.673-680, 2015 (Journal Indexed in SCI)
- VI. **Radiation sensitivity and EPR dosimetric potential of gallic acid and its esters**  
Tuner H., Bal M. O. , POLAT M.  
RADIATION PHYSICS AND CHEMISTRY, vol.107, pp.115-120, 2015 (Journal Indexed in SCI)
- VII. **The use of human hair as biodosimeter**  
Cam S. T. , POLAT M., Seyhan N.  
APPLIED RADIATION AND ISOTOPES, vol.94, pp.272-281, 2014 (Journal Indexed in SCI)
- VIII. **ESR and TL investigations on gamma irradiated linden (*Tilia vulgaris*)**  
Paksu U., Aydas C., Yuce U. R. , Aydin T., POLAT M., ENGİN B.  
RADIATION AND ENVIRONMENTAL BIOPHYSICS, vol.52, no.2, pp.255-267, 2013 (Journal Indexed in SCI)
- IX. **The use of ESR spectroscopy for the identification and dose assessment of irradiated pink shrimp (*Parapenaeus longirostris*) from Turkey**  
Aydas C., Cam S. T. , ENGİN B., AYDIN T., POLAT M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.168, no.3, pp.212-223, 2013 (Journal Indexed in SCI)
- X. **ESR and TL investigations on gamma irradiated Linden *Tilia vulgaris***  
PAKSU U., AYDAŞ C., RABİA YÜCE Ü., AYDIN T., POLAT M., ENGİN B.  
Radiation And Environmental Biophysics, vol.52, pp.255-257, 2013 (Journal Indexed in SCI Expanded)
- XI. **AN ELECTRON SPIN RESONANCE (ESR) INVESTIGATION OF THE DOSIMETRIC POTENTIAL OF POTASSIUM TARTRATE**  
Korkmaz G., ÖZSAYIN F., POLAT M.  
RADIATION PROTECTION DOSIMETRY, vol.148, no.3, pp.337-343, 2012 (Journal Indexed in SCI)

- XII. **ESR and TL studies of irradiated Anatolian laurel leaf (*Laurus nobilis* L.)**  
Cam S. T. , Aydas C., Engin B., Yuce U. R. , Aydin T., POLAT M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.167, no.6, pp.410-420, 2012 (Journal Indexed in SCI)
- XIII. **Detection of gamma irradiated fig seeds by analysing electron spin resonance**  
ENGİN B., AYDAŞ C., POLAT M.  
FOOD CHEMISTRY, vol.126, no.4, pp.1877-1882, 2011 (Journal Indexed in SCI)
- XIV. **Irradiation detection of coffee mate by electron spin resonance (ESR)**  
ÖZSAYIN F., POLAT M.  
RADIATION PHYSICS AND CHEMISTRY, vol.80, no.6, pp.771-775, 2011 (Journal Indexed in SCI)
- XV. **Usability of tartaric acid in dose measurements: an ESR study**  
Korkmaz G., POLAT M., Korkmaz M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.165, no.3, pp.252-259, 2010 (Journal Indexed in SCI)
- XVI. **The effects of temperature on ESR spectrum of gamma-irradiated ammonium tartrate**  
POLAT M., Korkmaz M.  
RADIATION PHYSICS AND CHEMISTRY, vol.78, no.11, pp.966-970, 2009 (Journal Indexed in SCI)
- XVII. **Radiation sensitivity and dosimetric features of sultamicillin tosylate: an electron spin resonance study**  
Cam S. T. , POLAT M., Korkmaz M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.164, no.2, pp.90-100, 2009 (Journal Indexed in SCI)
- XVIII. **Exacerbative role of vitamin A on radiation damage in vivo**  
Balabanli B., Turkozkan N., Akmansu M., POLAT M.  
MEDICINAL CHEMISTRY RESEARCH, vol.17, no.1, pp.12-18, 2008 (Journal Indexed in SCI)
- XIX. **Detection of irradiated black tea (*Camellia. sinensis*) and rooibos tea (*Aspalathus linearis*) by ESR spectroscopy**  
POLAT M., Korkmaz M.  
FOOD CHEMISTRY, vol.107, no.2, pp.956-961, 2008 (Journal Indexed in SCI)
- XX. **Identification and dosimetric features of gamma-irradiated cefadroxil by electron spin resonance**  
AYDAŞ C., Polat M., Korkmaz M.  
RADIATION PHYSICS AND CHEMISTRY, vol.77, no.1, pp.79-86, 2008 (Journal Indexed in SCI)
- XXI. **Electron spin resonance study of gamma-irradiated Anatolian chickpea (*Cicer arietinum* L.)**  
Aydas C., Engin B., POLAT M., Aydin T.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.163, no.1, pp.7-17, 2008 (Journal Indexed in SCI)
- XXII. **Molecular damages produced by gamma radiation in solid piperacillin monohydrate: an ESR investigation**  
Tepe S., Polat M., Korkmaz M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.162, no.9, pp.659-668, 2007 (Journal Indexed in SCI)
- XXIII. **Role of free radicals on mechanism of radiation nephropathy**  
BALABANLI K. B. , Turkozkan N., AKMANSU M., POLAT M.  
MOLECULAR AND CELLULAR BIOCHEMISTRY, vol.293, pp.183-186, 2006 (Journal Indexed in SCI)
- XXIV. **Effects of radiation on carbapenems: ESR identification and dosimetric features of gamma irradiated solid meropenem trihydrate**  
Tepe S., Polat M., Korkmaz M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.161, no.11, pp.653-664, 2006 (Journal Indexed in SCI)
- XXV. **Effect of gamma radiation on amlodis and its potential for radiosterilization**  
Polat M., Korkmaz M.  
JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS, vol.40, no.4, pp.882-888, 2006 (Journal Indexed in SCI)
- XXVI. **Effect of radiation on solid paracetamol: ESR identification and dosimetric features of gamma-irradiated paracetamol**  
Polat M., Korkmaz M.  
RADIATION EFFECTS AND DEFECTS IN SOLIDS, vol.161, no.1, pp.51-62, 2006 (Journal Indexed in SCI)

- XXVII. **ESR identification of gamma-irradiated redoxon and determination of ESR parameters of radicals produced in irradiated ascorbic acid**  
POLAT M., KORKMAZ M.  
ANALYTICA CHIMICA ACTA, vol.535, pp.331-337, 2005 (Journal Indexed in SCI)
- XXVIII. **An electron spin resonance study of radicals induced by radiation in oat (*Avena sativa* L.)**  
KORKMAZ M., POLAT M.  
INTERNATIONAL JOURNAL OF FOOD SCIENCE AND TECHNOLOGY, vol.39, no.9, pp.975-983, 2004 (Journal Indexed in SCI)
- XXIX. **The ESR spectroscopic features and kinetics of the radiation-induced free radicals in maize (*Zea mays* L.)**  
POLAT M., KORKMAZ M.  
FOOD RESEARCH INTERNATIONAL, vol.37, no.4, pp.293-300, 2004 (Journal Indexed in SCI)
- XXX. **The effect of temperature and storage time on the resonance signals of irradiated pea *Pisum sativum* L and applicability of ESR technique to the detection of irradiated pea**  
POLAT M., KORKMAZ M.  
Food Research International, vol.36, pp.857-862, 2003 (Journal Indexed in SCI Expanded)
- XXXI. **ESR Detection and Dosimetric Properties of Irradiated Naproxen Sodium**  
POLAT M., KORKMAZ M.  
International Journal Of Pharmaceutics, vol.255, pp.209-215, 2003 (Journal Indexed in SCI Expanded)
- XXXII. **Use of Electron Spin Resonance ESR Technique for the Detection of Irradiated Rice Seeds *Oryza Sativa* L**  
POLAT M., KORKMAZ M.  
International Journal Of Food Science And Technology, vol.38, pp.653-659, 2003 (Journal Indexed in SCI Expanded)
- XXXIII. **ESR Detection of Irradiated Broad Bean *Vicia faba* L and Kinetics of the Induced Free Radical and Mn<sup>2+</sup> Signals**  
POLAT M., KORKMAZ M.  
International Journal Of Food Science And Technology, vol.38, pp.641-651, 2003 (Journal Indexed in SCI Expanded)
- XXXIV. **Kinetics of the Mn<sup>2+</sup> ion and the free radical observed in gamma-irradiated soybean (*Glycine max* L.)**  
POLAT M., KORKMAZ M.  
FOOD RESEARCH INTERNATIONAL, vol.36, pp.1073-1080, 2003 (Journal Indexed in SCI)
- XXXV. **Use of electron spin resonance measurements on irradiated sperma lentil seeds to indicate accidental irradiation**  
KORKMAZ M., POLAT M.  
INTERNATIONAL JOURNAL OF FOOD SCIENCE AND TECHNOLOGY, vol.38, no.1, pp.1-9, 2003 (Journal Indexed in SCI)
- XXXVI. **Kinetics of the Radicals in Gamma irradiated Naproxen Sodium and Apranax Applicability of ESR Technique to Monitor Radiosterilization of Naproxen Sodium containing Drugs**  
POLAT M., KORKMAZ M.  
International Journal Of Pharmaceutics, vol.244, pp.169-179, 2002 (Journal Indexed in SCI Expanded)
- XXXVII. **An EPR study into the effect of annealing on both the Mn<sup>2+</sup> and free radical signal in lentil**  
POLAT M., KORKMAZ M.  
INTERNATIONAL JOURNAL OF FOOD SCIENCE AND TECHNOLOGY, vol.36, no.3, pp.313-320, 2001 (Journal Indexed in SCI)
- XXXVIII. **Radical Kinetics and Characterization of the Free Radicals in Gamma Irradiated Red Pepper**  
KORKMAZ M., POLAT M.  
Radiation Physics And Chemistry, vol.62, pp.411-421, 2001 (Journal Indexed in SCI Expanded)
- XXXIX. **Free Radical Kinetics of Irradiated Durum Wheat**  
KORKMAZ M., POLAT M.

- Radiation Physics And Chemistry, vol.58, pp.169-179, 2000 (Journal Indexed in SCI Expanded)
- XL. **ESR Spectroscopic Technique of Testing for Irradiation of Chicken**  
DULKAN B., TUTLUER H., AYHAN FİDANCI H., POLAT M.  
Radiation Physics And Chemistry, vol.51, pp.305-308, 1998 (Journal Indexed in SCI Expanded)
- XLI. **The Effect of Temperature on Radiation Induced Radicals in Irradiated Chicken Drumstick Bones**  
POLAT M., KORKMAZ M., KORKMAZ Ö.  
Radiation Physics And Chemistry, vol.49, pp.477-481, 1997 (Journal Indexed in SCI Expanded)
- XLII. **Detection of Irradiated Chicken and Dosimetric Properties of Drumstick Bones**  
POLAT M., KORKMAZ M.  
Radiation Physics And Chemistry, vol.49, pp.363-369, 1997 (Journal Indexed in SCI Expanded)

## Articles Published in Other Journals

- I. **Radyasyonun Oluşturduğu Serbest Radikal Aracılıklı Karaciğer Harabiyetinin Nitrik Oksit Oluşumu Yoluyla İncelenmesi**  
BALABANLI K. B., TÜRKÖZKAN N., POLAT M., AKMANSU M.  
KLİNİK GELİŞİM, vol.11, pp.402-403, 1998 (Other Refereed National Journals)

## Books & Book Chapters

- I. **Çözümlü Elektrostatik Problemleri**  
KORKMAZ M., POLAT M.  
Hacettepe Üniversitesi, Ankara, 2014
- II. **Çözümlü Doğru Akım ve Elektromanyetizma Problemleri**  
POLAT M., KORKMAZ M.  
Hacettepe Üniversitesi Yayınları, Ankara, 2013
- III. **Irradiation of fresh fruit and vegetables**  
Korkmaz M., Polat M.  
in: Improving the safety of fresh fruit and vegetables, Wim Jongen, Editor, CRC, New York , Florida, pp.387-428, 2005

## Supported Projects

- POLAT M., DİLAVER M., Project Supported by Higher Education Institutions, Işınlanmış Şeker ve Şeker İçeren Kuru Gıdaların Elektron Spin Rezonans ESR Tekniği İle Teşhisi ve Bu Gıdalarda Işınlama İle Oluşan Radikalik Araürünlerin Karakterizasyonu, 2018 - 2019
- ÇOLAK Ş., POLAT M., Project Supported by Higher Education Institutions, Araştırma Laboratuvarında Yenileme Çalışmaları, 2017 - 2018
- POLAT M., Project Supported by Higher Education Institutions, Elektron Paramanyetik Rezonans Yöntemiyle Stronsiyum Sülfat SrSO<sub>4</sub> Örneğinin Dozimetrik Özelliklerinin İncelenmesi, 2015 - 2015
- İDE S., SÜNETHÇİOĞLU M. M. , YILDIRIM L., ÖZBEY S., POLAT M., ÇOLAK Ş., Project Supported by Higher Education Institutions, FİZ301 FİZİK LAB. V. (Kuantum Fiziği Laboratuvarı) dersi kapsamındaki bazı deney donanımlarının sarf malzeme eksikliklerinin giderilmesi, 2014 - 2015

## Citations

Total Citations (WOS):251  
h-index (WOS):8