

## Dr. Öğr. Üyesi VOLKAN ALTUNAL

### Kişisel Bilgiler

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### Uluslararası Araştırmacı ID'leri

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Publons / Web Of Science ResearcherID: N-1604-2018

ScopusID: 56658720600

Yoksis Araştırmacı ID: 285901

### Eğitim Bilgileri

Doktora, Çukurova Üniversitesi, Fen Bilimleri Enstitüsü, Fizik, Türkiye 2016 - 2022

Yüksek Lisans, Çukurova Üniversitesi, Fen Bilimleri, Fizik, Türkiye 2013 - 2016

Lisans Çift Anadal, Çukurova Üniversitesi, Fen Edebiyat Fakültesi, Matematik, Türkiye 2010 - 2013

Lisans, Çukurova Üniversitesi, Fen Edebiyat Fakültesi, Fizik, Türkiye 2008 - 2013

### Yabancı Diller

İngilizce, C1 İleri

### Yaptığı Tezler

Doktora, Development of BeO Ceramic OSL Dosimeters: Their Synthesis, Sintering and Luminescence Studies, Çukurova Üniversitesi, Fen Bilimleri Enstitüsü, 2020

Yüksek Lisans, BeO OSL DOSIMETER: ITS SYNTHESIS AND LUMINESCENCE MECHANISMS, Çukurova Üniversitesi, Fen Bilimleri Enstitüsü, Fizik, 2016

### Araştırma Alanları

Fizik, Nükleer Fizik, Temel Bilimler

### Akademik Unvanlar / Görevler

Araştırma Görevlisi, Çukurova Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 2018 - Devam Ediyor

### SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayımlanan Makaleler

1. Luminescence properties of SrB6O10:Ce,Gd phosphor for applications in OSL dosimetry and lighting

Ozdemir A., ALTUNAL V., Guckan V., Kurt K., Kavgaci M., Takci K., Yigit O., Yegingil Z.

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- II. **Investigation of the electronic band gap tuning by Si doping on BeO using UV–VIS spectroscopy and density functional theory**  
Özcan M., Altunal V., Yeğingil Z.  
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- III. **Luminescence properties of Ce and Be-doped CaAl<sub>12</sub>O<sub>19</sub> for dosimetric and light-emitting applications**  
ALTUNAL V., Ozdemir A., Kurt K., Yigit O., Guckan V., Isik B., Yegingil Z.  
Journal of Alloys and Compounds, cilt.985, 2024 (SCI-Expanded)
- IV. **Nanostructured TLDs: Studying the impact of crystalline size on the Thermoluminescence glow-curve shape and electron trapping parameters**  
Tsoutsoumanos E., Saleh M., P.G. Konstantinidis., Altunal V., Sahare P. D., Yeğingil Z., T. Karakasidis., Kitis., Polymeris G.  
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- V. **Thermoluminescence and optically stimulated luminescence properties of NaMgF<sub>3</sub>:Dy,Eu synthesized by hydrothermal method and DFT calculations for the bandgap**  
Guckan V., Bokhari S., Altunal V., Varan N. E., Kurt K., Yildiz I., Gao W., Yegingil Z.  
MATERIALS RESEARCH BULLETIN, cilt.167, ss.112373, 2023 (SCI-Expanded)
- VI. **Studies of OSL properties of alkali- and rare earth-doped BeO based novel dosimeters for applications in external beam radiotherapy**  
Abusaid W., Altunal V., Akdeniz Y., Güçkan V., Ceyran G., Khandaker., Yeğingil Z.  
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- VII. **Experimental and Monte Carlo study of energy response of BEO-based OSL detectors within photon energy range up to 15 MeV**  
Chumak V., Bakhanova E., Altunal V., Lawrence Y., Dubinski S., Yu Y., Liao L., Yeğingil Z.  
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- VIII. **Structural, mechanical, dielectric and defect properties of Eu-doped BeO ceramics: A computational and experimental approach**  
Fonseca D. P. D., Otsuka A., Rezende M. V. D. S., Santos J. L., Altunal V., Souza A. S., Yeğingil Z., Lima H.  
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- IX. **Effects of oxygen vacancies on luminescence characteristics of BeO ceramics**  
Altunal V., Guckan V., Yegingil Z.  
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- X. **Luminescence properties of Tb and Eu activated CaSO<sub>4</sub> phosphor**  
Guckan V., Bereket S., Altunal V., Abusaid W., Yegingil Z.  
RADIATION PHYSICS AND CHEMISTRY, cilt.203, 2023 (SCI-Expanded)
- XI. **Structural and thermoluminescence properties of borate mineral ulexite**  
Altunal V., Mesto A., Guckan V., Kavgaci M., Ozdemir A., Abusaid W., Kurt K., Yegingil Z.  
JOURNAL OF LUMINESCENCE, cilt.251, 2022 (SCI-Expanded)
- XII. **Development of BeO:Na,Yb,Dy ceramics for optically stimulated luminescence dosimetry**  
Altunal V., Jain M., Hayat S., Guckan V., Yegingil Z.  
RADIATION MEASUREMENTS, cilt.158, 2022 (SCI-Expanded)
- XIII. **TL and OSL characteristics of the fluoroperovskite KMgF<sub>3</sub>:Eu,Yb, Li for dosimetry applications**  
Guckan V., Altunal V., Polymeris G. S., Ozdemir A., Zhydachevskyy Y., Yegingil Z.  
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- XIV. **Luminescence characterization of Ce and Gd doped MgB<sub>4</sub>O<sub>7</sub> phosphors**  
Altunal V., Abusaid W., Guckan V., Özdemir A., Yeğingil Z.  
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- XV. **Impact of Li concentration in KMgF<sub>3</sub>:Eu,Yb fluoroperovskite on structure and luminescence properties**

- Güçkan V., Kaya D., Altunal V., Ekicibil A., Karadağ F., Özdemir A., Yeğingil Z.  
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- XVI. **Three newly developed BeO-based OSL dosimeters**  
Altunal V., Guckan V., Ozdemir A., Zydachevskyy Y., Lawrence Y., Yu Y., Yegingil Z.  
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- XVII. **Thermoluminescence dosimetry properties of Tm<sup>3+</sup> doped fluoropasolite Cs<sub>2</sub>NaYF<sub>6</sub> crystals synthesized under hydrothermal conditions**  
Khaidukov N., Makhov V., Guckan V., Altunal V., Ozdemir A., Kurt K., Abusaid W., Yeğingil Z.  
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- XVIII. **A systematic study on luminescence characterization of lanthanide-doped BeO ceramic dosimeters**  
Altunal V., Guckan V., Ozdemir A., Ekicibil A., Karadağ F., Yegingil I., Zydachevskyy Y., Yeğingil Z.  
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- XIX. **Luminescence of Ce<sup>3+</sup> and Li<sup>+</sup> co-doped MgO synthesized using solid-state reaction method**  
Guckan V., Bokhari S. W., Altunal V., Ozdemir A., Gao W., Yeğingil Z.  
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- XX. **Use of infrared light-emitting diodes to determine dosimetric characteristics of MgO:Tb,Gd,Li via the optically stimulated luminescence technique**  
Guckan V., Altunal V., Ozdemir A., Kurt K., Yeğingil Z.  
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- XXI. **Luminescence characteristics of newly-developed MgB<sub>4</sub>O<sub>7</sub>:Ce<sup>3+</sup>, Na<sup>+</sup> phosphor as an OSL dosimeter**  
Ozdemir A., Altunal V., Guckan V., Kurt K., Yeğingil Z.  
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- XXII. **Thermoluminescence in MgB<sub>4</sub>O<sub>7</sub>:Pr,Dy dosimetry powder synthesized by solution combustion synthesis method**  
Ozdemir A., Guckan V., Altunal V., Kurt K., Yegingil Z.  
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- XXIII. **Cu, Li and K activated MgO: A metal oxide thermoluminescent synthesized using solution combustion technique for dosimetry**  
Guckan V., Altunal V., Ozdemir A., Kurt K., Yegingil Z.  
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- XXIV. **Investigation of luminescence properties of BeO ceramics doped with metals for medical dosimetry**  
Altunal V., Guckan V., Özdemir A. C., Kurt K., Ekicibil A., Yeğingil Z.  
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- XXV. **A calcination study on BeO ceramics for radiation dosimetry**  
ALTUNAL V., GUCKAN V., ÖZDEMİR A. C., YEĞİNGİL Z.  
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- XXVI. **Optically stimulated luminescence of MgO:Na,Li phosphor prepared using solution combustion method**  
Guckan V., ALTUNAL V., ÖZDEMİR A. C., YEĞİNGİL Z.  
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- XXVII. **A newly developed OSL dosimeter based on beryllium oxide: BeO:Na,Dy,Er**  
ALTUNAL V., GUCKAN V., YU Y., DICKER A., YEĞİNGİL Z.  
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- XXVIII. **Calcination effects on europium doped zinc oxide as a luminescent material synthesized via sol-gel and precipitation methods**  
Guckan V., Altunal V., Ozdemir A., Tsiunra V., Zhydachevskyy Y., Yegingil Z.  
Journal of Alloys and Compounds, cilt.823, 2020 (SCI-Expanded)
- XXIX. **Radiation dosimeter utilizing optically stimulated luminescence of BeO:Na,Tb,Gd ceramics**  
Altunal V., Guckan V., Ozdemir A., Yegingil Z.

- Journal of Alloys and Compounds, cilt.817, 2020 (SCI-Expanded)
- XXX. **Luminescence characteristics of Al-and Ca-doped BeO obtained via a sol-gel method**  
Altunal V., Guckan V., Ozdemir A., Can N., Yegingil Z.  
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- XXXI. **Studies of blue light induced phototransferred thermoluminescence in CaSO<sub>4</sub>:Mg**  
Guckan V., Ozdemir A., Altunal V., Yegingil I., Yegingil Z.  
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- XXXII. **Effect of sintering temperature on dosimetric properties of BeO ceramic pellets synthesized using precipitation method**  
ALTUNAL V., GUCKAN V., ÖZDEMİR A. C., SOTELO A., YEĞİNGİL Z.  
Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, cilt.441, ss.46-55, 2019 (SCI-Expanded)
- XXXIII. **Optically stimulated luminescence characteristics of BeO nanoparticles synthesized by sol-gel method**  
ALTUNAL V., YEĞİNGİL Z., TÜKEN T., Depci T., ÖZDEMİR A. C., GUCKAN V., Nur N., Kurt K., BULUR E.  
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- XXXIV. **Characterization and some fundamental features of Optically Stimulated Luminescence measurements of silver activated lithium tetraborate**  
ÖZDEMİR A. C., ALTUNAL V., Guckan V., Can N., Kurt K., Yegingil I., YEĞİNGİL Z.  
Journal of Luminescence, cilt.202, ss.136-146, 2018 (SCI-Expanded)
- XXXV. **Radiometric measurement of lignite coal and its by-products and assessment of the usability of fly ash as raw materials in Turkey**  
Turhan Ş., GÖREN E., Garad A. M., Altlkulaç A., Kurnaz A., Duran C., Hançerlioğulları A., ALTUNAL V., GÜÇKAN V., ÖZDEMİR A.  
Radiochimica Acta, cilt.106, sa.7, ss.611-621, 2018 (SCI-Expanded)
- XXXVI. **Thermoluminescence properties of Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Cu, B phosphor synthesized using solution combustion technique**  
ÖZDEMİR A. C., ALTUNAL V., Kurt K., Depci T., YU Y., LAWRENCE Y., Nur N., GUCKAN V., YEĞİNGİL Z.  
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- XXXVII. **Studying CaSO<sub>4</sub>:Eu as an OSL phosphor**  
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- XXXVIII. **Thermoluminescence properties of non-stoichiometric Li<sub>2</sub>Si<sub>2</sub>O<sub>5</sub> synthesized from natural amethyst quartz**  
Nur N., GUCKAN V., Kizilkaya N., Depci T., Ahmedova C., ÖZDEMİR A. C., ALTUNAL V., YEĞİNGİL Z.  
JOURNAL OF LUMINESCENCE, cilt.179, ss.366-371, 2016 (SCI-Expanded)
- XXXIX. **Determination of dosimetric properties of MgO doped natural amethyst samples**  
Nur N., GUCKAN V., Kizilkaya N., Depci T., Ahmedova C., YÜCEL A., ÖZDEMİR A. C., ALTUNAL V., Koc V., YEĞİNGİL Z.  
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- XL. **Thermoluminescence study of Mn doped lithium tetraborate powder and pellet samples synthesized by solution combustion synthesis**  
ÖZDEMİR A. C., YEĞİNGİL Z., Nur N., Kurt K., TÜKEN T., Depci T., TANSUĞ G., ALTUNAL V., GUCKAN V., SIĞIRCIK G., et al.  
JOURNAL OF LUMINESCENCE, cilt.173, ss.149-158, 2016 (SCI-Expanded)
- XLI. **Study of thermoluminescence response of purple to violet amethyst quartz from Balıkesir, Turkey**  
Nur N., Yegingil Z., Topaksu M., Kurt K., Doğan T., Sarıgül N., Yüksel M., Altunal V., Özdemir A. C., Guckan V., et al.  
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## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **The Effect of Calcination Conditions on Luminescence Efficiency of BeO Ceramics Synthesized Using Co-Precipitation Method**  
ALTUNAL V., Güçkan V., ÖZDEMİR A., YEĞİNGİL Z.  
Journal of Investigations on Engineering Technology, cilt.2, sa.2, ss.40-44, 2019 (Hakemli Dergi)
- II. **Structure Characterization and Luminescence Studies of MgO:Li Calcinated at Different Temperatures via Solution Combustion and Sol-Gel Methods**  
Güçkan V., ALTUNAL V., ÖZDEMİR A., YEĞİNGİL Z.  
Journal of Investigations on Engineering and Technology, cilt.2, sa.2, ss.45-48, 2019 (Hakemli Dergi)

## **Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar**

- I. **Optically Stimulated Luminescence of MgB4O7 Doped with Ce<sup>3+</sup> and Gd<sup>3+</sup>**  
Abusaïd W., Altunal V., Özdemir A., Güçkan V., Ekicibil A., Karadağ F., Yeğingil Z.  
International Conference on Oxide Materials for Electronic Engineering - fabrication, properties and applications, Lviv, Ukrayna, 28 Eylül - 02 Ekim 2021, ss.120
- II. **Luminescence Characterization of BeO:Na5%,Ce0.01%,Er0.01% Ceramic**  
Altunal V., Güçkan V., Özdemir A., Abusaïd W., Ekicibil A., Karadağ F., Yeğingil Z.  
International Conference on Oxide Materials for Electronic Engineering -fabrication, properties and applications, Lviv, Ukrayna, 28 Eylül - 02 Ekim 2021, ss.104
- III. **Developing new MgO luminophors with different dopants for dosimetry applications and determination of ESR properties**  
Güçkan V., ALTUNAL V., ÖZDEMİR A., ERÜNAL E., YEĞİNGİL Z.  
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- IV. **A Study of BeO Luminophosphores Synthesized with Different Calcination Conditions**  
ALTUNAL V., ÖZDEMİR A., Güçkan V., YEĞİNGİL Z.  
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- V. **Developing new MgO luminophors with different dopants for dosimetry applications and determination of ESR properties**  
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- VI. **Blue light sensitivity of calcium sulfate doped with rare earth elements using luminescence technique**  
Güçkan V., ALTUNAL V., ÖZDEMİR A., YEĞİNGİL Z.  
5th International Conference on Theoretical and Experimental Studies in Nuclear Applications and Technology, Amasya, Türkiye, 2 - 04 Mayıs 2019
- VII. **Development of Lithium Tetraborate (Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Ag,Eu) Compound Doped with Silver (Ag) and Europium (Eu) as a Luminescence Dosimeter Using TL-OSL Technique**  
ÖZDEMİR A., ALTUNAL V., Güçkan V., YEĞİNGİL Z.  
International Symposium on Boron, Nevşehir, Türkiye, 17 - 19 Nisan 2019
- VIII. **Systematic development of an OSL dosimeter based on BeO**  
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5th International Conference on Materials Science and Nanotechnology for Next Generation (MSNG-2018), Nevşehir, Türkiye, 4 - 06 Ekim 2018
- IX. **A preliminary study of TL and OSL properties of MgO doped with Gd and Tb**  
GÜÇKAN V., ÖZDEMİR A., ALTUNAL V., YEĞİNGİL Z.

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- X. **Annealing Effect on Deep Traps as PTTL Sources of CaSO<sub>4</sub>:Mg**  
GÜÇKAN V., ALTUNAL V., ÖZDEMİR A., YEĞİNGİL Z.  
11st Internatinal Conferences on Luminescence and ESR Dosimetry (LUMIDOZ11), Gaziantep, Türkiye, 5 - 07 Eylül 2018
- XI. **Optically Stimulated Luminescence (OSL) from BeO:Al,Ca Ceramics Synthesized via Sol-Gel Method**  
ALTUNAL V., GÜÇKAN V., ÖZDEMİR A., BULUR E., YEĞİNGİL Z.  
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- XII. **TL-OSL Correlation in CaSO<sub>4</sub>:Mg dosimetric phosphor**  
GÜÇKAN V., ÖZDEMİR A., ALTUNAL V., YEĞİNGİL Z.  
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- XIII. **Luminescence properties of Calcium doped BeO Ceramics**  
ÖZDEMİR A., ALTUNAL V., GÜÇKAN V., BULUR E., YEĞİNGİL Z.  
11th Internatinal Conferences on Luminescence and ESR Dosimetry (LUMIDOZ11), Gaziantep, Türkiye, 5 - 07 Eylül 2018
- XIV. **The studying kinetic parameters of thermoluminescence glow peaks-from Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Ag,Gd phosphor**  
ÖZDEMİR A., POLYMERİS G., ŞAHİNER E., AŞLAR E., GÜÇKAN V., ALTUNAL V., MERİÇ N., YEĞİNGİL Z.  
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- XV. **OSL properties of BeO:Al Ceramics**  
ALTUNAL V., ÖZDEMİR A., GÜÇKAN V., BULUR E., YEĞİNGİL Z.  
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- XVI. **OSL Properties Of BeO:Na,Gd,Tb Synthesized Using Precipitation Method**  
ALTUNAL V., ÖZDEMİR A., GÜÇKAN V., YEĞİNGİL Z.  
International Conferences on Physical Chemistry and Functional Materials (PCFM18), Elazığ, Türkiye, 19 - 21 Haziran 2018
- XVII. **OSL Response of BeO pellets doped with Al, Ca dopants and various Ln co-dopants**  
GÜÇKAN V., ÖZDEMİR A., ALTUNAL V., YEĞİNGİL Z.  
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- XVIII. **Temperature dependence of OSL signals from BeO ceramic pellets synthesized using Sol-Gel and Precipitation Methods**  
ALTUNAL V., GÜÇKAN V., ÖZDEMİR A., YEĞİNGİL Z.  
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- XIX. **Synthesis and Luminescence Characterization of Non-stoichiometric Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Ag,Tb**  
ÖZDEMİR A., ALTUNAL V., GÜÇKAN V., KURT K., YEĞİNGİL Z.  
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- XX. **Optically Stimulated Luminescence (OSL) and Thermoluminescence (TL) Properties of Ag<sub>1</sub>, Tb<sub>3</sub> and Gd<sub>3</sub> Doped Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub> Phosphor**  
ÖZDEMİR A., GÜÇKAN V., ALTUNAL V., KURT K., YEĞİNGİL Z.  
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- XXI. **Preparation of BeO ceramic pellets doped with Mg dopants and different co-dopants for OSL dosimetry**  
GÜÇKAN V., ALTUNAL V., ÖZDEMİR A., YEĞİNGİL Z.

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- XXII. **ESTIMATION of THE TRAPPING PARAMETERS of Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Ag,Gd PHOSPHOR by FGC, ID AND CGCD METHODS**  
ÖZDEMİR A., ŞAHİNER E., POLYMERİS G., AŞLAR E., GÜÇKAN V., ALTUNAL V., MERİÇ N., YEĞİNGİL Z.  
Nükleer Bilimler Lisansüstü Öğrenci Kongresi, Ankara, Türkiye, 11 - 13 Mayıs 2018
- XXIII. **Luminescence Spectrum Of ZrO<sub>2</sub> Doped Gd<sub>3</sub> Under X-ray Excitation At Room Temperature.**  
KURT K., YALAZ E., YILMAZ S., ÖZDEMİR A., ALTUNAL V., GÜÇKAN V., YEĞİNGİL Z.  
15th International Conference On Luminescence And Electron Spin Resonance Dating, Cape-Town, Güney Afrika, 11 - 15 Eylül 2017
- XXIV. **A Study For The Estimation Of Osl Trap Parameters In Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:ag,gd Phosphor**  
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- XXV. **Effect Of Sintering Temperature On Dosimetric Properties Of BeO Ceramic Pellets Synthesized Using Precipitation Method**  
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- XXVI. **BeO: MgO as A Mixture Dosimeter: Its Luminescence Mechanism**  
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- XXVII. **Optically Stimulated Luminescence Properties Of BeO: TiO<sub>2</sub> As A Mixture Dosimeter**  
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- XXXI. **Determination Of Potential Use Of Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:ag,tb For Dosimetry Purposes Using Osl Technique**  
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- XXXII. **Osl Study Of Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:nd, K, Cu, Na Samples Synthesized By Solid State Method**  
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- XXXIII. **Li<sub>2</sub> B<sub>4</sub>O<sub>7</sub>:ag,tb Phosphor And Its Neutron Sensitivity For Dosimetry Applications**

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**XXXIV. Studying 6Li2Co3 As A Neutron Converter For Investigation Of The Neutron Responses From Synthesized Beo Pellets Using Optically Stimulated Luminescence (osl)**

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- LVIII. THERMOLUMINESCENCE STUDY OF Mn DOPED LITHIUMTETRABORATE POWDER AND PELLET SAMPLESYNTHESIZED BY SULATION COMBUSTION SYNTHESIS**  
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- LXI. **Thermoluminescence study of Mn doped lithium tetraborate powder and pellet samples synthesized by Solution Combustion Synthesis**  
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