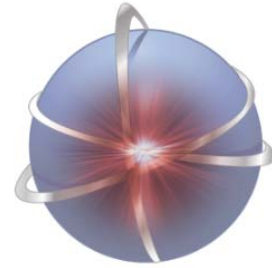


TESNAT 2017

**3rd International Conference on
Theoretical and Experimental Studies in
Nuclear Applications and Technology**

10-12 May 2017 ukurova University, Adana, Turkey

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Abstract Book

Editors

Eyyup TEL, Abdullah AYDIN, İsmail Hakkı SARPÜN

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Dear Colleagues,

Welcome to the 3rd International Conference on Theoretical and Experimental Studies in Nuclear Applications and Technology (TESNAT 2017). This conference is the third step of the TESNAT Conference series. TESNAT 2015 was held in Osmaniye Korkut Ata University, Osmaniye and TESNAT 2016 was held in Mustafa Kemal University, Hatay. The world of nuclear physics is an exciting area in which to work, and we'll continue to meet and bring inspired people together in conference like this, to ensure TESNAT remains at the cutting edge.

We intend in this conference to discuss and compare all applicable methods as are being applied at present in nuclear physics. The problems faced in these fields at present are focused in the development of new methods and in the improving of existing techniques to achieve an understanding of existing experimental data and in predicting with high reliability new properties and processes. We propose this conference as a mean to bring together all these related communities with the goal of creating an enriching dialog across the disciplines. The conference will give an overview on the theoretical and experimental challenges in nuclear physics and applications.

We'd like to thank each of you for attending our conference and bringing your expertise to our gathering. You are truly our greatest asset today and tomorrow, and we could not accomplish what we do without your support and leadership.

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Thermoluminescence characteristics of SrAl₂O₄:Dy phosphor prepared by the solution combustion method

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In this preliminary study, SrAl₂O₄:Dy phosphor was synthesized by solution combustion synthesis (SCS) method using SrCO₃, Al(NO₃)₃·9H₂O, Dy₂O₃, H₃BO₃, urea and HNO₃ starting materials. In order to characterize the prepared material, XRD and SEM techniques were used. TL glow curves were recorded from room temperature to 400°C at a constant heating rate of 1°C/s after preheat process at 130°C for 10 second using lexsys smart TL/OSL reader. It was observed that the samples have a high temperature peak at about 160°C. Dose responses of Dy-doped SrAl₂O₄ phosphors were investigated after the beta irradiation in the dose ranges from 0.5 Gy to 100 Gy and it was determined the SrAl₂O₄:Dy phosphors show a linear dose response in these dose ranges. In addition to these studies, the activation energy and frequency factor of SrAl₂O₄:Dy phosphor were also calculated by peak shape method.

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