

Prof. CUMALI TAV

Personal Information

Email: ctav@marmara.edu.tr

Web: <https://avesis.marmara.edu.tr/ctav>

International Researcher IDs

ScholarID: wP1c35gAAAAJ

ORCID: 0000-0002-6500-7903

Yoksis Researcher ID: 100524

Education Information

Doctorate, University of Tennessee, Knoxville, Atom Ve Molekül, Department of Physics, United States Of America 1996 - 2000

Postgraduate, University of Wisconsin-Madison, Graduate School, Department of Physics, United States Of America 1991 - 1993

Undergraduate, Cukurova University, Fen-Edebiyat Fakültesi, Fizik Bölümü, Turkey 1985 - 1989

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, Simha-Somcynsky ve Cahn Hilliard kuramlarını kullanarak polimerlerin yüzey serbest hacim derinlik profillerinin çıkarılması, Marmara University, Faculty of Arts and Sciences, Physics, 2011

Research Areas

Natural Sciences

Academic Titles / Tasks

Professor, Marmara University, Faculty of Arts and Sciences, Physics, 2002 - Continues

Supervised Theses

Yahşi U., Tav C., Statistical thermodynamics of macromolecular system in terms of simha-somcynsky theory in conjunction with lattice cluster theory = Örgü küme teorisiyle birleşimli simha somcynsky teorisinden makromoleküler sistemlerin istatistiksel termodinamiği, Postgraduate, A.Awati(Student), 2019

TAV C., YAŞI U., Automated data acquisition and analysis system for positron annihilation spectroscopy, Postgraduate, M.Adil(Student), 2019

TAV C., YAHŞI U., Katkılandırılmış PNN-PZT piezoelektrik seramiklerin pozitron yokolma (PALS) tekniğiyle incelenmesi, Postgraduate, F.Çetin(Student), 2019

Tav C., Characteristic properties of thermoplastic polyurethane/boron nitride composite using thermal and positron annihilation lifetime spectroscopy techniques, Postgraduate, M.YAVUZ(Student), 2017

Tav C., Sımha-Somcynsky kuramı kullanılarak polimerlerin Newtonyen ve Newtonyen olmayan viskoz davranışının serbest hacim cinsinden incelenmesi, Doctorate, F.DİNÇ(Student), 2013

TAV C., Tav C., Neodiyum (Nd+3) katkılı yitriyumsilikat (Nd+3 : YSO) nanofosfor sentezi, optiksel ve yapısal özellikleri, Doctorate, M.Erdem(Student), 2011

Tav C., Simha-Somcynsky ve Cahn Hilliard kuramlarını kullanarak polimerlerin yüzey serbest hacim derinlik profillerinin çıkarılması, Doctorate, S.KUZECI(Student), 2011

Tav C., Hacimsel malzemelerin hızlı nötron radyografisi ile tahribatsız analizi, Doctorate, E.KAM(Student), 2011

YAHŞI U., TAV C., Simha-somcynsky ve Cahn Hillard kuramlarını kullanarak polimerlerin yüzey serbest hacim derinlik profiline çıkarılması, Doctorate, S.Küzeci(Student), 2011

Tav C., Neodiyum (Nd+3) katkılı yitriyumsilikat (Nd3+:YSO) nanofosfor sentezi, optiksel ve yapısal özellikleri, Doctorate, M.ERDEM(Student), 2011

Tav C., Pozitron teknikleriyle polimer elektrolitlerin iletkenlik-serbest hacim ilişkisinin incelenmesi, Postgraduate, G.ERDEMCİ(Student), 2009

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Free volume impact on ionic conductivity of PVdF/GO/PVP solid polymer electrolytes via positron annihilation approach**
Yilmazoğlu M., Okkay H., ABACI U., Tekay E., Coban O., VEZİROĞLU S., YUMAK YAHŞI A., TAV C., YAHŞI U.
Radiation Physics and Chemistry, vol.229, 2025 (SCI-Expanded)
- II. **The Influence of Defects on the Structural, Optical, and Antibacterial Properties of Cr/Cu Co-Doped ZnO Nanoparticles**
Arda L., Raad Z., VEZİROĞLU S., TAV C., YAHŞI U.
Journal of Molecular Structure, vol.1320, 2025 (SCI-Expanded)
- III. **Correlation of proton conductivity and free volume in sulfonated polyether ether ketone electrolytes: A positron annihilation lifetime spectroscopy study**
Lahmuni M., Yilmazoğlu M., ABACI U., Coban O., YUMAK YAHŞI A., TAV C., YAHŞI U.
Radiation Physics and Chemistry, vol.226, 2025 (SCI-Expanded)
- IV. **Preparation and characterization of an acrylated-coumarin-containing photo-crosslinked thiol-ene network: Investigation of the free-volume, thermal, UV, and photoluminescence properties**
Uyumaz F., Artuç G. Ö., Pehlivan G., Akdoğan A., Yahşi U., Tav C., Bulut M., Kahraman M. V.
Polymer Engineering and Science, 2025 (SCI-Expanded)
- V. **A novel approach for the atomic scale characterization of Li-ion battery components probed by positron annihilation lifetime spectroscopy**
Bakar R., Koc S., YUMAK YAHŞI A., TAV C., YAHŞI U.
Materials Research Bulletin, vol.180, 2024 (SCI-Expanded)
- VI. **Free-volume analysis of the structural and dielectric properties of PMMA/TeO₂ composites via positron annihilation lifetime spectroscopy**
Kuzeci S., Ozcan E., KAYA A. U., Bakar R., TAV C., YAHŞI U., ESMER K.
Journal of Alloys and Compounds, vol.1004, 2024 (SCI-Expanded)
- VII. **Proton pathways via free volumes: A positron annihilation lifetime spectroscopy (PALS) investigation of proton conductivity in SPEEK-PEG-TMOS composites**
Yilmazoğlu M., ABACI U., Okkay H., Yahsi A., TAV C., YAHŞI U.
Colloids and Surfaces A: Physicochemical and Engineering Aspects, vol.687, 2024 (SCI-Expanded)
- VIII. **Free-Volume analysis of PAMAM dendrimers by means of positron annihilation lifetime spectroscopy**

Yumak Yahsi A., Uzun H., Altunkaya A. N., Unalkizilirmak A., TL M., TAV C., YAHŐI U.

Journal of Molecular Structure, vol.1302, 2024 (SCI-Expanded)

IX. Cation Vacancy-Mediated Ultrafast Hole Transport in CuBi2O4 Photocathodes

Ardalı E., Jahangiri H., Solati N., YAHŐI U., TAV C., Sennaroglu A., Kaya S.

ChemSusChem, 2024 (SCI-Expanded)

X. Investigation of Nd³⁺:Y₂Si₂O₇ Phosphors Using Photoluminescence and Positron Annihilation Lifetime Spectroscopy

Akay L. N., Kuzeci S., Akti N., Erdem M., TAV C., YAHŐI U., Eryrek G., Di Bartolo B.

ECS Journal of Solid State Science and Technology, vol.12, no.8, 2023 (SCI-Expanded)

Books

I. FİZİK, Fen ve Mhendislik iin Teknoloji Gncellemeli, Serway, Jewett,, CİLT 1, Mekanik/Dalgalar/Termodinamik

YahŐi U., Salı . A., Keskin S. S., Tav C., Dumludaĝ F., Yumak YahŐi A., Avgın İ.

Palme Yayın Daĝıtım, İstanbul, 2021

Papers Published in Refereed Scientific Meetings

I. Some Studies Related to the Determination of Factors Affecting Positronium Formation of High Density Polyethylene (HDPE) via Positron Annihilation Lifetime Spectroscopy (PALS)

ZTRK ŐEN B., YAHŐI U., TAV C.

ICACCHE 2nd International Conference on Applications in Chemistry and Chemical Engineering, Belgrade, Serbia And Montenegro, 10 - 14 October 2018

II. Correlation between Free Volume Holes and Mechanical Properties of Side Chain LCP-HDPE Graft Products

ZTRK ŐEN B., YAHŐI U., ETİN S., TAV C., yener m. y., SOYKAN U.

ICACCHE 2nd International Conference on Applications in Chemistry and Chemical Engineering, Belgrade, Serbia And Montenegro, 10 - 14 October 2018

III. Ionic Conductivity of PVdF-co-HFP with Li-salts in terms of Free Volume Probed by Positron Annihilation Lifetime Spectroscopy

YAHŐI U., TAV C., ERDEMCİ TANDOĝAN G., COŐKUN B., DELİGZ H., YILMAZTRK S., YILMAZOĝLU M., ULUTAŐ H. K., DEGER D., YAKUT Ő.

Uluslararası Katılımlı VII. Polimer Bilim ve Teknoloji Kongresi, EskiŐehir, Turkey, 9 - 12 September 2018

IV. Ionic Conductivity of PVdF-co-HFP with Li-salts In Terms of Free Volume Probed by Positron Annihilation Lifetime Spectroscopy

TAV C., ULUTAŐ H. K., DELİGZ H., YILMAZOĝLU M., ULUTAŐ D., YAKUT Ő., COŐKUN B., ERDEMCİ G., YILMAZTRK S., YAHŐI U.

Uluslararası Katılımlı VII. Polimer Bilim ve Teknoloji Kongresi (Polimer 2018), 9 - 12 September 2018

V. DC Conductivity, Thermal and Free Volume Properties of Thermoplastic polyurethane/boron nitride compounds

YAHŐI U., YENER M. Y., MADAKBAŐ S., TAV C., DUMLUDAĝ F., UMER M. A.

Uluslararası Katılımlı VII. Polimer Bilim ve Teknoloji Kongresi (Polimer 2018), 9 - 12 September 2018

VI. Temperature and Pressure Dependent Relaxation of Polymers In Terms of Free Volume Fraction

YAHŐI U., COŐKUN B., YUMAK YAHŐI A., TAV C.

Uluslararası Katılımlı VII. Polimer Bilim ve Teknoloji Kongresi (Polimer 2018), EskiŐehir, Turkey, 9 - 12 September 2018

VII. Investigation of a Relationship Between Free Volume and Ionic Conductivity of PVdF-co-HFP with Ionic Liquid

YAHŞI U., TAV C., ULUTAŞ H. K., DELİGÖZ H., ÇOŞKUN B., ERDEMÇİ G., YILMAZTÜRK S., YILMAZOĞLU M., ULUTAŞ D., YAKUT Ş.

The International Joint Science Congress of Materials Polymers, 25 - 28 August 2017

VIII. **Free Volume Properties of Side Chain LCP-HDPE Graft Coproducts Probed by Positron Annihilation Lifetime Spectroscopy**

ÖZTÜRK ŞEN B., YAHŞI U., TAV C., ÇETİN S., YENER M. Y., SOYKAN U.

The International Joint Science Congress of Materials Polymers, 25 - 28 August 2017

IX. **The Surface Gradient Profile of Free Volume of PS, PMMA, and SAN using Simha-Somcynsky and Cahn-Hilliard Theories**

YUMAK YAHŞI A., KUZECİ S., TAV C., YAHŞI U.

The International Joint Science Congress of Materials Polymers, 25 - 28 August 2017

X. **The Surface Gradient Profile of Free Volume of PS, PMMA, and SAN using Simha-Somcynsky and Cahn-Hilliard Theories**

YUMAK YAHŞI A., YAHŞI U., TAV C., KÜZECİ S.

The International Joint Science Congress of Materials Polymers ISCMP 2017, Ohrid, Macedonia, 25 - 28 August 2017

XI. **Investigation of relationship between Free volume and Ionic conductivity of pvdF-co-hfp with Ionic liquid**

YAHŞI U., TAV C., ERDEMÇİ TANDOĞAN G., ÇOŞKUN B., DELİGÖZ H., YILMAZTÜRK S., YILMAZOĞLU M., ULUTAŞ H. K., DEĞER D., ŞAHİN Y.

The International Joint Science Congress of Materials Polymer, 25 - 28 August 2017

XII. **Morphology and Luminescence Characteristics of Yttriumdisilicate doped with Yb³⁺ Er³⁺ Ho³⁺ and Tm³⁺**

BOYRAZ C., ERDEM M., EKMEKÇİ M. K., TAV C., ERYÜREK G.

2 nd world congress on new technologies ICNFA, 18 - 19 August 2016

XIII. **Pressure Effect On The Yb³⁺ Y₂Si₂O₇ Nano Powders**

ERDEM M., TAV C., MERGEN A., ERYÜREK G., BALDASSARE D. B.

International Powder Porous Materials 2015, 15 September - 18 April 2015

XIV. **Phase dependent Spectroscopic properties of Neodymium or Erbium doped Yttriumdisilicates**

ERDEM M., EKMEKÇİ M. K., COLLINS J., TAV C., MERGEN A., ERYÜREK G., DI BARTOLO B.

International Powder Porous Materials, 15 - 19 September 2015

XV. **Pressure Effect On The Yb³⁺ Y₂Si₂O₇ Nano Powders International Powder Porous Materials**

TAV C., ERDEM M., ERYÜREK G., MERGEN A., DI BARTOLO B.

International Powder Porous Materials, 15 - 17 September 2015

XVI. **Structural and spectroscopic properties of sol gelderived neodymium doped yttrium silicate**

ERDEM M., TAV C., ERYÜREK G.

7. Türkiye Nanobilim ve Nanoteknoloji Konferansı, Turkey, 27 June - 01 July 2011

XVII. **Synthesis and characterization of nanocrystallineyttrium silicatematerials doped with neodymium**

ERDEM M., TAV C., ERYÜREK G.

6th Nanoscience and Nanotechnology Conference (NanoTR-VI), Turkey, 15 - 18 June 2010

Supported Projects

Tav C., Uzun H., Yumak Yahşi A., Yahşi U., Project Supported by Higher Education Institutions, Investigation of Void Structure of PAMAM Dendrimers using Positron Annihilation Lifetime Spectroscopy, 2018 - 2021

Metrics

Publication: 61

Citation (WoS): 119

Citation (Scopus): 227

H-Index (WoS): 7

H-Index (Scopus): 11