

Prof. İLHAN YAVUZ

Personal Information

Email: ilhan.yavuz@marmara.edu.tr

Web: <http://abys.marmara.edu.tr/ilhan.yavuz/>

Address: Marmara Üniversitesi Göztepe Kampüsü 34722 Ziverbey, Kadıköy, İstanbul

International Researcher IDs

ScholarID: dUrCXWEAAAAJ

ORCID: 0000-0002-3268-6268

Yoksis Researcher ID: 173512

Education

Doctorate, Marmara University, Faculty of Arts and Sciences, Physics, Turkey 2006 - 2012

Postgraduate, Marmara University, Faculty of Arts and Sciences, Physics, Turkey 2003 - 2006

Undergraduate, Trakya University, Fen Fakültesi, Fizik Bölümü, Turkey 1999 - 2003

Foreign Languages

English, C1 Advanced

German, B1 Intermediate

Dissertations

Doctorate, Atomik hedeflerden yüksek-mertebeli harmonik üretimde verim artırılması: iki renk sürümü, gürültü ve uyarılma etkileri, karboksil asit dimerlerinin ayrışma reaksiyon dinamikleri, Marmara Üniversitesi, Faculty of Arts and Sciences, Physics, 2012

Postgraduate, (n111)q1 (n212)q2 ve (n111)q1 (n212)q2 (n313)q3 şeklinde uyarılmış elektron konfigürasyonlarına sahip atomların oto-iyonlaşma oranlarının açısal integrallerinin açısal momentum grafikleri yardımıyla hesaplanması ve radyal denklemlerin elde edilmesi, Marmara University, Faculty of Arts and Sciences, Physics, 2006

Research Areas

Atomic and Molecular Physics, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties

Academic Positions

Associate Professor, Marmara University, Faculty of Arts and Sciences, Physics, 2016 - Continues

Research Assistant, Marmara University, Faculty of Arts and Sciences, Physics, 2007 - 2016

Academic and Administrative Experience

Head of Department, Marmara University, Faculty of Arts and Sciences, Physics, 2019 - 2019

Courses

Doctorate

Computer Simulations in Physics and Chemistry, Doctorate, 2018 - 2019

Undergraduate

Calculus I, Undergraduate, 2018 - 2019

Elektrik ve Manyetizma II, Undergraduate, 2018 - 2019

Physics II, Undergraduate, 2018 - 2019

Physics I, Undergraduate, 2018 - 2019

Linear Algebra, Undergraduate, 2018 - 2019

Elektrik ve Manyetizma, Undergraduate, 2018 - 2019

Dijital Elektronik Laboratuvarı, Undergraduate, 2014 - 2015

Supervised Theses

Yavuz İ., Directional dissociation of molecules by spatially and temporally modified laser fields, Doctorate, S.ARİFE(Student), 2020

Yavuz İ., Investigation Of The Molecular Ordering And Charge Transport Of Circular Oligomer / Fullerene Complexes For Solar Cell Applications, Postgraduate, O.KOÇAK(Student), 2019

Yavuz İ., Current-driven generation and stabilization of magnetic skyrmions, Doctorate, C.DEĞER(Student), 2019

Yavuz İ., Organik yarı iletkenlerin polaron-bağlanma ve reorganizasyon enerjilerinin yüksek duyarlılıkla tahmin edilmesi, Postgraduate, C.GÜLERYÜZ(Student), 2017

Jury Memberships

Post Graduate, Post Graduate, Gebze Teknik Üniversitesi, June, 2019

Doctoral Examination, Doctoral Examination, Trakya Üniversitesi, October, 2018

Post Graduate, Post Graduate, Gebze Teknik Üniversitesi, June, 2018

Journal articles indexed in SCI, SSCI, and AHCI

- I. **Resolving Scaling Issues in Self-Assembled Monolayer-Based Perovskite Solar Modules via Additive Engineering**
Pininti A. R., Subbiah A. S., DEĞER C., YAVUZ İ., Prasetyo A., Dally P., Hnapovskiy V., Said A. A., Torres Merino L. V., Mannar S., et al.
Advanced Energy Materials, vol.15, no.7, 2025 (SCI-Expanded)
- II. **Methylthio Substituent in SAM Constructing Regulatory Bridge with Photovoltaic Perovskites**
Chen C., Liu G., Chen X., DEĞER C., Jin R., Wang K., Chen J., Xia Y., Huang L., YAVUZ İ., et al.
Angewandte Chemie - International Edition, vol.64, no.7, 2025 (SCI-Expanded)
- III. **Screening Fluorination Additives for Efficient Perovskite Light-Emitting Diodes**
Xia Y., Zou C., Lou Y., Zhou Y., Nar A., Li Y., Nizamani N., Wang K., Chen C., Chen J., et al.
Advanced Materials, vol.37, no.3, 2025 (SCI-Expanded)
- IV. **Divalent cation replacement strategy stabilizes wide-bandgap perovskite for Cu(In,Ga)Se₂ tandem solar cells**
Tian L., Bi E., YAVUZ İ., DEĞER C., Tian Y., Zhou J., Zhang S., Liu Q., Shen J., Yao L., et al.
Nature Photonics, 2025 (SCI-Expanded)

- V. **Sublimed C60 for efficient and repeatable perovskite-based solar cells**
Said A. A., Aydin E., Ugur E., Xu Z., DEĞER C., Vishal B., Vlk A., Dally P., Yildirim B. K., Azmi R., et al.
Nature Communications, vol.15, no.1, 2024 (SCI-Expanded)
- VI. **Micro-homogeneity of lateral energy landscapes governs the performance in perovskite solar cells**
Shi P., Ding B., Jin D., Oner M., Zhang X., Tian Y., Li Y., Zhao K., Sun Z., Xu J., et al.
Nature Communications, vol.15, no.1, 2024 (SCI-Expanded)
- VII. **Strain regulates the photovoltaic performance of thick-film perovskites**
Shi P., Xu J., YAVUZ İ., Huang T., Tan S., Zhao K., Zhang X., Tian Y., Wang S., Fan W., et al.
Nature Communications, vol.15, no.1, 2024 (SCI-Expanded)
- VIII. **Surficial Homogenic Effect Enables Highly Stable Deep-Blue Perovskite Light-Emitting Diodes**
Li Y., Xia Y., Chen C., Jin R., Nar A., Chen J., Li N., Wang K., YAVUZ İ., Wang Z.
Angewandte Chemie - International Edition, vol.63, no.46, 2024 (SCI-Expanded)
- IX. **Cation reactivity inhibits perovskite degradation in efficient and stable solar modules**
Ding Y., Ding B., Shi P., Romano-deGea J., Li Y., Turnell-Ritson R. C., Syzgantseva O. A., YAVUZ İ., Xia M., Yu R., et al.
Science (New York, N.Y.), vol.386, no.6721, pp.531-538, 2024 (SCI-Expanded)
- X. **Mitigating Buried-Interface Energy Losses through Multifunctional Ligands in n-i-p Perovskite/Silicon Tandem Solar Cells**
Zhang S., Wang J., Kalasariya N., Dally P., DEĞER C., YAVUZ İ., Razzaq A., Vishal B., Prasetio A., Utomo D. S., et al.
ACS Energy Letters, vol.9, no.9, pp.4633-4644, 2024 (SCI-Expanded)
- XI. **Triiodide Formation Governs Oxidation Mechanism of Tin-Lead Perovskite Solar Cells via A-Site Choice**
Alsulami A., Lanzetta L., Huerta Hernandez L., Rosas Villalva D., Sharma A., Gonzalez Lopez S. P., Emwas A., Yazmaciyan A., Laquai F., YAVUZ İ., et al.
Journal of the American Chemical Society, vol.146, no.33, pp.22970-22981, 2024 (SCI-Expanded)
- XII. **Chelation strategy induced blue-shift for efficient deep-blue perovskite light-emitting diodes**
Xia Y., Zhang Z., Zhou Y., Li Y., Wang B., Wang K., Chen C., Chen J., YAVUZ İ., Xing G., et al.
Science Bulletin, vol.69, no.15, pp.2332-2336, 2024 (SCI-Expanded)
- XIII. **peri-Fused polyaromatic molecular contacts for perovskite solar cells**
Zhao K., Liu Q., Yao L., DEĞER C., Shen J., Zhang X., Shi P., Tian Y., Luo Y., Xu J., et al.
Nature, vol.632, no.8024, pp.301-306, 2024 (SCI-Expanded)
- XIV. **Lead Isolation and Capture in Perovskite Photovoltaics toward Eco-Friendly Commercialization**
Chen C., Cheng S., Hu F., Su Z., Wang K., Cheng L., Chen J., Shi Y., Xia Y., Teng T., et al.
Advanced Materials, vol.36, no.31, 2024 (SCI-Expanded)
- XV. **Ferroelastic Control of the Multicolor Emission from a Triply Doped Organic Crystal**
Commins P., Al-Handawi M. B., DEĞER C., Polavaram S., YAVUZ İ., Rezgui R., Li L., Houk K., Naumov P.
Journal of the American Chemical Society, vol.146, no.24, pp.16540-16548, 2024 (SCI-Expanded)
- XVI. **Manipulating the Interfacial Dipole Toward High-Performance Perovskite Solar Cells via Conjugated Organic Ammonium**
Liu C., Shi P., Li C., Huang W., Yang X., YAVUZ İ., Xue J., Liu R., Wang R.
ACS Sustainable Chemistry and Engineering, vol.12, no.23, pp.8923-8929, 2024 (SCI-Expanded)
- XVII. **Oscillatory behavior of interlayer Dzyaloshinskii-Moriya interaction by spacer thickness variation**
Demiroglu E., Hancioglu K., YAVUZ İ., Avci C., DEĞER C.
Physical Review B, vol.109, no.14, 2024 (SCI-Expanded)
- XVIII. **Constructing Charge Bridge Path for High-Performance Tin Perovskite Photovoltaics**
Hu F., Chen C., Teng T., Shi Y., Wang B., Xue D., Xia Y., Chen J., Wang K., Huang L., et al.
Advanced Energy Materials, vol.14, no.10, 2024 (SCI-Expanded)
- XIX. **Ion-Migration Inhibitor for Spiro-OMeTAD/Perovskite Contact toward Stable Perovskite Solar Cells**
Xu J., Shi P., Zhao K., Yao L., DEĞER C., Wang S., Zhang X., Zhang S., Tian Y., Wang X., et al.
ACS Energy Letters, vol.9, no.3, pp.1073-1081, 2024 (SCI-Expanded)
- XX. **Incorporation Mechanism of Potassium in FAPbI₃ Perovskite Solar Cell Materials**
ALEVLİ M., Gungor N., KAVAK P., ŞAHİN N., Corcor A., Topal I., ESMER K., ÇAKMAKÇI E., DEĞER C., YAVUZ İ.

Journal of Physical Chemistry C, vol.128, no.7, pp.2759-2766, 2024 (SCI-Expanded)

- XXI. **Magnetic-biased chiral molecules enabling highly oriented photovoltaic perovskites**
Chen J., DEĞER C., Su Z., Wang K., Zhu G., Wu J., He B., Chen C., Wang T., Gao X., et al.
National Science Review, vol.11, no.2, 2024 (SCI-Expanded)
- XXII. **π - π stacking constructing efficient charge channels for perovskite photovoltaics**
Chen C., Hu F., Wang K., Chen J., Teng T., Shi Y., Xia Y., Su Z., Gao X., YAVUZ İ., et al.
Science Bulletin, vol.69, no.1, pp.26-29, 2024 (SCI-Expanded)
- XXIII. **Tailoring the π -conjugation in self-assembled hole-selective molecules for perovskite photovoltaics**
Zhao K., Yao L., Liu C., YAVUZ İ., Shen J., Shi P., Zhang X., Luo Y., Jin D., Tian Y., et al.
Science China Materials, 2024 (SCI-Expanded)
- XXIV. **Phase segregation affects electron-phonon coupling in perovskite solar cell materials**
YAVUZ İ.
Journal of Materials Chemistry C, vol.11, no.44, pp.15482-15488, 2023 (SCI-Expanded)
- XXV. **Oriented nucleation in formamidinium perovskite for photovoltaics**
Shi P., Ding Y., Ding B., Xing Q., Kodalle T., Sutter-Fella C. M., YAVUZ İ., Yao C., Fan W., Xu J., et al.
Nature, vol.620, no.7973, pp.323-327, 2023 (SCI-Expanded)
- XXVI. **Design of an amorphous ZnWSe₂ alloy-based counter electrode for highly efficient dye-sensitized solar cells**
Ari D., Sezgin A., Unal M., Akman E., YAVUZ İ., Liang F., Yilmaz M., Akin S.
Materials Chemistry Frontiers, vol.7, no.18, pp.4120-4131, 2023 (SCI-Expanded)
- XXVII. **Achieving sustainability of greenhouses by integrating stable semi-transparent organic photovoltaics**
Zhao Y., Li Z., DEĞER C., Wang M., Peric M., Yin Y., Meng D., Yang W., Wang X., Xing Q., et al.
Nature Sustainability, vol.6, no.5, pp.539-548, 2023 (SCI-Expanded)
- XXVIII. **Suppressing ion migration in metal halide perovskite via interstitial doping with a trace amount of multivalent cations**
Zhao Y., YAVUZ İ., Wang M., Weber M. H., Xu M., Lee J., Tan S., Huang T., Meng D., Wang R., et al.
NATURE MATERIALS, vol.21, no.12, pp.1396-1402, 2022 (SCI-Expanded)
- XXIX. **Accelerated discovery of defect tolerant organo-halide perovskites**
İşleyen N., Corcor A., Çakirefe S., Ormanlı N., Kanat E., YAVUZ İ.
Journal of Materials Chemistry C, vol.10, no.48, pp.18385-18392, 2022 (SCI-Expanded)
- XXX. **Defect Pair Formation in FAPbI₃ Perovskite Solar Cell Absorbers**
Sezen E., Oner S. M., DEĞER C., YAVUZ İ.
Journal of Physical Chemistry Letters, vol.13, no.41, pp.9718-9724, 2022 (SCI-Expanded)
- XXXI. **Lattice strain suppresses point defect formation in halide perovskites**
Deger C., Tan S., Houk K. N., Yang Y., YAVUZ İ.
NANO RESEARCH, vol.15, no.6, pp.5746-5751, 2022 (SCI-Expanded)
- XXXII. **Stability-limiting heterointerfaces of perovskite photovoltaics**
Tan S., Huang T., YAVUZ İ., Wang R., Yoon T. W., Xu M., Xing Q., Park K., Lee D., Chen C., et al.
NATURE, vol.605, pp.268-273, 2022 (SCI-Expanded)
- XXXIII. **Rational selection of the polymeric structure for interface engineering of perovskite solar cells**
Wang M., Zhao Y., Jiang X., Yin Y., YAVUZ İ., Zhu P., Zhang A., Han G. S., Jung H. S., Zhou Y., et al.
JOULE, vol.6, no.5, pp.1032-1048, 2022 (SCI-Expanded)
- XXXIV. **Wide-Gap Perovskite via Synergetic Surface Passivation and Its Application toward Efficient Stacked Tandem Photovoltaics**
Huang T., Wang R., Nuryyeva S., Tan S., Xue J., Zhao Y., Wu Q., Weber M. H., Cheng P., Meng D., et al.
SMALL, vol.18, 2022 (SCI-Expanded)
- XXXV. **Surface Defect Formation and Passivation in Formamidinium Lead Triiodide (FAPbI₃) Perovskite Solar Cell Absorbers**
Oner S. M., Sezen E., Yordanlı M. S., Karakoc E., Deger C., Yavuz I.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.13, pp.324-330, 2022 (SCI-Expanded)
- XXXVI. **Performance-limiting formation dynamics in mixed-halide perovskites**

- Huang T., Tan S., Nuryyeva S., YAVUZ İ., Babbe F., Zhao Y., Abdelsamie M., Weber M. H., Wang R., Houk K. N., et al.
SCIENCE ADVANCES, vol.7, no.46, 2021 (SCI-Expanded)
- XXXVII. **Surface Reconstruction of Halide Perovskites During Post-treatment**
Tan S., Huang T., YAVUZ İ., Wang R., Weber M. H., Zhao Y., Abdelsamie M., Liao M. E., Wang H., Huynh K., et al.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.143, no.18, pp.6781-6786, 2021 (SCI-Expanded)
- XXXVIII. **Intrinsic Static/Dynamic Energetic Disorders of Amorphous Organic Semiconductors: Microscopic Simulations and Device Study**
Aydin G., Yavuz İ.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.125, no.12, pp.6862-6869, 2021 (SCI-Expanded)
- XXXIX. **Shallow Iodine Defects Accelerate the Degradation of alpha-Phase Formamidinium Perovskite**
Tan S., YAVUZ İ., Weber M. H., Huang T., Chen C., Wang R., Wang H., Ko J. H., Nuryyeva S., Xue J., et al.
JOULE, vol.4, no.11, pp.2426-2442, 2020 (SCI-Expanded)
- XL. **Structural order and charge transfer in highly strained carbon nanobelts**
Aydin G., Kocak O., Guleryuz C., YAVUZ İ.
NEW JOURNAL OF CHEMISTRY, vol.44, no.36, pp.15769-15775, 2020 (SCI-Expanded)
- XL1. **Noncovalent pi-stacked robust topological organic framework**
Meng D., Yang J. L., Xiao C., Wang R., Xing X., Kocak O., Aydin G., YAVUZ İ., Nuryyeva S., Zhang L., et al.
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol.117, no.34, pp.20397-20403, 2020 (SCI-Expanded)
- XLII. **Strain-promoted perpendicular magnetic anisotropy in Co-Rh alloys**
Aksu P., Deger C., Yavuz I., Yildiz F.
APPLIED PHYSICS LETTERS, vol.116, no.21, 2020 (SCI-Expanded)
- XLIII. **Steric Impediment of Ion Migration Contributes to Improved Operational Stability of Perovskite Solar Cells**
Tan S., YAVUZ İ., De Marco N., Huang T., Lee S., Choi C. S., Wang M., Nuryyeva S., Wang R., Zhao Y., et al.
ADVANCED MATERIALS, vol.32, no.11, 2020 (SCI-Expanded)
- XLIV. **Carrier-envelope-phase-controlled molecular dissociation by ultrashort chirped laser pulses**
Bozpolat S. A., Rosenberger P., Ciappina M. F., Kling M. F., YAVUZ İ.
PHYSICAL REVIEW A, vol.100, no.6, 2019 (SCI-Expanded)
- XLV. **Constructive molecular configurations for surface-defect passivation of perovskite photovoltaics**
Wang R., Xue J., Wang K., Wang Z., Luo Y., Fenning D., Xu G., Nuryyeva S., Huang T., Zhao Y., et al.
SCIENCE, vol.366, no.6472, pp.1509-1541, 2019 (SCI-Expanded)
- XLVI. **Impact of interlayer coupling on magnetic skyrmion size**
DEĞER C., YAVUZ İ., Yildiz F.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.489, 2019 (SCI-Expanded)
- XLVII. **Crystalline Liquid-like Behavior: Surface-Induced Secondary Grain Growth of Photovoltaic Perovskite Thin Film.**
Xue J., Wang R., Wang K., Wang Z., Yavuz İ., Wang Y., Yang Y., Gao X., Huang T., Nuryyeva S., et al.
Journal of the American Chemical Society, vol.141, pp.13948-13953, 2019 (SCI-Expanded)
- XLVIII. **Current-driven coherent skyrmion generation**
Deger C., Yavuz I., Yildiz F.
SCIENTIFIC REPORTS, vol.9, 2019 (SCI-Expanded)
- XLIX. **Charge Transfer and Interface Effects in Co-Assembled Circular Donor/Acceptor Complexes for Organic Photovoltaics**
Koçak O., DURU İ. P., YAVUZ İ.
Advanced Theory and Simulations, pp.1, 2019 (SCI-Expanded)
- L. **Solid-State Order and Charge Mobility in [5]- to [12]Cycloparaphenylenes**
Lin J. B., Darzi E. R., Jasti R., Yavuz I., Houk K. N.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.141, no.2, pp.952-960, 2019 (SCI-Expanded)
- LI. **Impact of morphology, side-chains, and crystallinity on charge-transport properties of -extended double helicenes**

- YAVUZ İ., Lin J. B., Houk K. N.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.21, no.2, pp.901-914, 2019 (SCI-Expanded)
- LII. **Control of molecular dissociation by spatially inhomogeneous near fields**
Yavuz I., Schoetz J., Ciappina M. F., Rosenberger P., Altun Z., Lewenstein M., Kling M. F.
PHYSICAL REVIEW A, vol.98, no.4, 2018 (SCI-Expanded)
- LIII. **Intrinsic charge-mobility in benzothieno[3,2-b][1]benzothiophene (BTBT) organic semiconductors is enhanced with long alkyl side-chains**
Alkan M., Yavuz I.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.20, no.23, pp.15970-15979, 2018 (SCI-Expanded)
- LIV. **Understanding the Impact of Thiophene/Furan Substitution on Intrinsic Charge-Carrier Mobility**
Turan H. T., YAVUZ İ., AVIYENTE V.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.121, no.46, pp.25682-25690, 2017 (SCI-Expanded)
- LV. **Dichotomy between the band and hopping transport in organic crystals: insights from experiments**
Yavuz I.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.19, no.38, pp.25819-25828, 2017 (SCI-Expanded)
- LVI. **The effect of hexyl side chains on molecular conformations, crystal packing, and charge transport of oligothiophenes**
Cherniawski B. P., Lopez S. A., Burnett E. K., YAVUZ İ., Zhang L., Parkin S. R., Houk K. N., Briseno A. L.
JOURNAL OF MATERIALS CHEMISTRY C, vol.5, no.3, pp.582-588, 2017 (SCI-Expanded)
- LVII. **Mesoscale Ordering and Charge-Transport of Crystalline Spiro-OMeTAD Organic Semiconductors**
YAVUZ İ., Houk K. N.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.121, no.2, pp.993-999, 2017 (SCI-Expanded)
- LVIII. **Understanding dispersive charge-transport in crystalline organic-semiconductors**
YAVUZ İ., Lopez S. A.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.19, no.1, pp.231-236, 2017 (SCI-Expanded)
- LIX. **Below-threshold harmonic generation from strong non-uniform fields**
Yavuz I.
JOURNAL OF MODERN OPTICS, vol.64, no.19, pp.2043-2050, 2017 (SCI-Expanded)
- LX. **Quantitative prediction of morphology and electron transport in crystal and disordered organic semiconductors**
YAVUZ İ., Lopez S. A., Lin J. B., Houk K. N.
JOURNAL OF MATERIALS CHEMISTRY C, vol.4, no.47, pp.11238-11243, 2016 (SCI-Expanded)
- LXI. **Controlling electron localization in H-2(+) by intense plasmon-enhanced laser fields**
Yavuz I., Ciappina M. F., Chacon A., Altun Z., Kling M. F., Lewenstein M.
PHYSICAL REVIEW A, vol.93, no.3, 2016 (SCI-Expanded)
- LXII. **High-order-harmonic generation from Rydberg atoms driven by plasmon-enhanced laser fields**
Tikman Y., Yavuz I., Ciappina M. F., Chacon A., Altun Z., Lewenstein M.
PHYSICAL REVIEW A, vol.93, no.2, 2016 (SCI-Expanded)
- LXIII. **High-order-harmonic generation from H-2(+) molecular ions near plasmon-enhanced laser fields**
YAVUZ İ., Tikman Y., ALTUN Z.
PHYSICAL REVIEW A, vol.92, no.2, 2015 (SCI-Expanded)
- LXIV. **A Solid-State Effect Responsible for an Organic Quintet State at Room Temperature and Ambient Pressure**
Zheng Y., Miao M., Dantelle G., Eisenmenger N. D., Wu G., YAVUZ İ., Chabinyc M. L., Houk K. N., Wudl F.
ADVANCED MATERIALS, vol.27, no.10, pp.1718-1724, 2015 (SCI-Expanded)
- LXV. **Theoretical Study of the Molecular Ordering, Paracrystallinity, And Charge Mobilities of Oligomers in Different Crystalline Phases**
YAVUZ İ., Martin B. N., Park J., Houk K. N.
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.137, no.8, pp.2856-2866, 2015 (SCI-Expanded)
- LXVI. **Simulations of Molecular Ordering and Charge-Transport of Oligo-Didodecylquaterthiophenes (DDQT)**

- YAVUZ İ., Zhang L., Briseno A. L., Houk K. N.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.119, no.1, pp.158-165, 2015 (SCI-Expanded)
- LXVII. **Phase-dependent interference fringes in the wavelength scaling of harmonic efficiency**
Yavuz I., Bleda E. A., Altun Z., Topcu T.
PHYSICAL REVIEW A, vol.89, no.5, 2014 (SCI-Expanded)
- LXVIII. **Phase dependent interference fringes in the wavelength scaling of harmonic efficiency**
ALTUN Z., BLEDA E. A., YAVUZ İ., TOPCU T.
Physical Review X, vol.89, pp.55801, 2014 (SCI-Expanded)
- LXIX. **High-order-harmonic generation from Rydberg states at fixed Keldysh parameter**
Bleda E. A., Yavuz I., Altun Z., Topcu T.
PHYSICAL REVIEW A, vol.88, no.4, 2013 (SCI-Expanded)
- LXX. **High-order-harmonic generation from Rydberg states at fixed Keldysh parameter**
ALTUN Z., BLEDA E. A., YAVUZ İ., TURKER T.
PHYSICAL REVIEW A, vol.88, no.4, 2013 (SCI-Expanded)
- LXXI. **Gas population effects in harmonic emission by plasmonic fields**
Yavuz I.
PHYSICAL REVIEW A, vol.87, no.5, 2013 (SCI-Expanded)
- LXXII. **Computational thermochemistry of glycolaldehyde**
BLEDA E. A., YAVUZ İ., ALTUN Z., Trindle C.
INTERNATIONAL JOURNAL OF QUANTUM CHEMISTRY, vol.113, no.8, pp.1147-1154, 2013 (SCI-Expanded)
- LXXIII. **Wavelength scaling of high-order-harmonic-generation efficiency by few-cycle laser pulses: Influence of carrier-envelope phase**
Yavuz I., Altun Z., Topcu T.
PHYSICAL REVIEW A, vol.86, no.4, 2012 (SCI-Expanded)
- LXXIV. **Generation of a broadband xuv continuum in high-order-harmonic generation by spatially inhomogeneous fields**
Yavuz I., Bleda E. A., Altun Z., Topcu T.
PHYSICAL REVIEW A, vol.85, no.1, 2012 (SCI-Expanded)
- LXXV. **Generation of a broadband xuv continuum in high-order-harmonic generation by spatially inhomogeneous fields**
YAVUZ İ., BLEDA E. A., ALTUN Z., Topcu T.
PHYSICAL REVIEW A, vol.85, no.1, 2012 (SCI-Expanded)
- LXXVI. **DFT characterization of the first step of methyl acrylate polymerization: Performance of modern functionals in the complete basis limit**
YAVUZ İ., ÇİFTÇİOĞLU G. A.
COMPUTATIONAL AND THEORETICAL CHEMISTRY, vol.978, pp.88-97, 2011 (SCI-Expanded)
- LXXVII. **Enhancement of high-order harmonic generation in the presence of noise**
Yavuz I., Altun Z., Topcu T.
JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS, vol.44, no.13, 2011 (SCI-Expanded)
- LXXVIII. **Two small thermodynamically stable organic dications**
YUMAK YAHŞİ A., YAVUZ İ., ALTUN Z., Trindle C.
JOURNAL OF MOLECULAR STRUCTURE-THEOCHEM, vol.940, pp.6-12, 2010 (SCI-Expanded)
- LXXIX. **Focal point analysis of torsional isomers of acrylic acid**
ÇİFTÇİOĞLU G. A., Trindle C., YAVUZ İ.
MOLECULAR PHYSICS, vol.108, pp.2601-2609, 2010 (SCI-Expanded)
- LXXX. **Structure, binding energies, and IR-spectral fingerprinting of formic acid dimers**
YAVUZ İ., Trindle C.
JOURNAL OF CHEMICAL THEORY AND COMPUTATION, vol.4, no.3, pp.533-541, 2008 (SCI-Expanded)
- LXXXI. **Dielectronic recombination data for dynamic finite-density plasmas - XIII. The magnesium isoelectronic sequence**
Altun Z., Yumak A., Yavuz I., Badnell N. R., Loch S. D., Pindzola M. S.

Papers Presented at Peer-Reviewed Scientific Conferences

- I. **Isotope Effect on Molecular Dissociation by Intense Laser Fields in The Vicinity of Metallic Nanotip**
Karakas S. A., Öner M., Yavuz İ.
Turkish Physical Society 35th International Physics Congress (TPS35), Muğla, Turkey, 4 - 08 September 2019, (Full Text)
- II. **Controlling Electron Localization in the Dissociation of H₂ and HD**
Öner M., Karakas S. A., Yavuz İ.
Turkish Physical Society 35th International Physics Congress (TPS35), Muğla, Turkey, 4 - 08 September 2019, (Full Text)
- III. **ORGANİK YARI İLETKENLERİN POLARON-BAĞLANMA VE REORGANİZASYON ENERJİLERİNİN DFT YÖNTEMLERİYLE BULUNMASI**
Güleryüz C., YAVUZ İ.
ULUSLARARASI MULTİDİSİPLİNER ÇALIŞMALAR VE ARAŞTIRMALAR KONGRESİ, Turkey, 6 - 08 September 2019, (Full Text)
- IV. **Chirp effect on molecular dissociation**
KARAKAŞ S. A., Rosenberger P., Ciappina M., Kling M., YAVUZ İ.
ECAMP13, 8 - 12 April 2019, (Summary Text)
- V. **Current-driven coherent skyrmion generation**
DEĞER C., YAVUZ İ., YILDIZ F.
APS March Meeting 2019, 4 - 08 March 2019, (Summary Text)
- VI. **Impact of interlayer coupling on magnetic skyrmion size**
DEĞER C., YAVUZ İ., YILDIZ F.
APS March Meeting, 4 - 08 March 2019, (Summary Text)
- VII. **MORPHOLOGY AND CHARGE-MOBILITY OF LONG ALKYL SIDE-CHAINED BTBTs**
Alkan M., YAVUZ İ.
OEMT2018, 20 - 22 September 2018, vol.3, pp.40, (Summary Text)
- VIII. **Investigation of the Molecular Ordering and Charge Transport of Circular-Oligomer/Fullerene Complexes for Solar-Cells**
Koçak O., DURU İ. P., YAVUZ İ.
OEMT2018, 20 - 22 September 2018, vol.3, pp.76, (Summary Text)
- IX. **Morphology and Charge-Mobility of Long Alkyl Side-Chained BTBTs**
Yavuz İ.
OEMT, Kırklareli, Turkey, 20 - 22 September 2018, pp.40, (Summary Text)
- X. **Investigation of the Molecular Ordering and Charge Transport of Circular-Oligomer/Fullerene Complexes for Solar-Cell**
Yavuz İ.
OEMT2018, Kırklareli, Turkey, 20 - 22 September 2018, pp.76, (Summary Text)
- XI. **Understanding the impact of thiophene/furansubstitution to intrinsic charge-carrier mobility**
Turan H. T., YAVUZ İ., Aviyente V.
International Symposium on Chemistry Via Computation Applications on Molecular Nanoscience, 30 October 2017, (Summary Text)
- XII. **Dynamical origin of room-temperature charge-transport in organic crystal**
YAVUZ İ.
International Symposium on Chemistry Via Computation Applications on Molecular Nanoscience, 30 October 2017, (Summary Text)
- XIII. **BELOW-THRESHOLD HARMONIC GENERATION FROM STRONG NON-UNIFORM FIELDS**
YAVUZ İ.

- TFD - 33 Turkish Physical Society Conference, 6 September - 10 October 2017, (Summary Text)
- XIV. **Magnetic Properties of Co Doped Graphene: a Monte-Carlo Study**
KALAYCI T., DURU İ. P., DEĞER C., YAVUZ İ.
Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, Muğla, Turkey, 6 - 10 October 2017, (Summary Text)
- XV. **ORIGIN OF MAGNETISM IN CR3 DOPEDGRAPHENE**
DEĞER C., DURU İ. P., KALAYCI T., YAVUZ İ.
Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, Muğla, Turkey, 6 - 10 October 2017, (Summary Text)
- XVI. **ACCURATE PREDICTION OF POLARON-BINDINGAND REORGANIZATION ENERGIES OF ORGANICSEMICONDUCTORS.**
Güleryüz C., YAVUZ İ.
TFD 33 - Turkish Physical Society Int. Conference, 6 - 10 September 2017, (Summary Text)
- XVII. **DICHOTOMY BETWEEN THE BAND AND HOPPINGTRANSPORT IN ORGANIC CRYSTALS: INSIGHTSFROM THE EXPERIMENTS**
YAVUZ İ.
TFD33 - Turkish Physical Society Int. Conference, 6 September - 10 October 2017, (Summary Text)
- XVIII. **Influence of odd/even alkyl side-chain substitution on the morphology andcharge-transport of benzothieno-benzothiophenes (BTBT)**
Alkan M., YAVUZ İ.
TFD33 - Turkish Physical Society Int. Conference, 27 August - 01 September 2017, (Summary Text)
- XIX. **FERROMAGNETISM IN METAL ION DOPED DNA: A MONTECARLO STUDY**
DEĞER C., KALAYCI T., DURU İ. P., ELDEM V., YAVUZ İ.
International Congress on Fundamental and Applied Sciences 2017, Saraybosna, Bosnia And Herzegovina, 21 - 25 August 2017, (Summary Text)
- XX. **FIRST PRINCIPLES STUDY OF REGIOSELECTIVITY OF METALION DOPING TO DNA BASE PAIRS**
DEĞER C., KALAYCI T., DURU İ. P., ELDEM V., YAVUZ İ.
International Congress on Fundamental and Applied Sciences 2017, Saraybosna, Bosnia And Herzegovina, 21 - 25 August 2017, (Summary Text)
- XXI. **Dissociation of H2 in strong inhomogeneous near-fields**
YAVUZ İ., Ciappina M. F., Chacon A., ALTUN Z., Lewenstein M., Kling M. F.
INTERNATIONAL CONFERENCE ON PHOTONIC ELECTRONIC AND ATOMIC COLLISIONS, 26 July - 01 August 2017, (Full Text)
- XXII. **Atomistic Morphologies and Charge transport of 5 12 cycloparaphenylenes**
YAVUZ İ., Lopez S. A., Lin J. B., Darzi E., Jasti R., Houk K. N.
UCLA Reception Research Showcase at ACS National Meeting, San Diego, 13 - 17 March 2016, (Summary Text)
- XXIII. **Predicting atomistic morphologies and charge transport of 5 12 cycloparaphenylene**
YAVUZ İ., Lopez S., Lin J., Darzi E., Jasti R., Houk K.
ACS Conference Exposition, 13 - 17 March 2016, (Summary Text)
- XXIV. **Harmonic-emission from Rydberg states in the vicinity of metallic nanostructures**
Yavuz I., Tikman Y., Altun Z.
29th International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC), Toledo, Philippines, 22 - 28 July 2015, vol.635, (Full Text)
- XXV. **Stochastic Enhancement of High order Harmonic Generation**
YAVUZ İ.
XXVII INTERNATIONAL CONFERENCE ON PHOTONIC, ELECTRONIC AND ATOMIC COLLISIONS (ICPEAC 2011), PTS 1-15, Belfast, K. Irlanda, United Kingdom, 01 November 2012, vol.388, pp.32023, (Summary Text)
- XXVI. **Dielectronic Recombination in He like Li like and Be like Iodine and KLM Resonances**
BLEDA E. A., YUMAK YAHŞI A., YAVUZ İ., ALTUN Z.
XXVII INTERNATIONAL CONFERENCE ON PHOTONIC, ELECTRONIC AND ATOMIC COLLISIONS (ICPEAC 2011), PTS 1-15, Belfast, K. Irlanda, United Kingdom, 1 - 05 October 2012, vol.388, pp.62038, (Full Text)
- XXVII. **Exploring the high order harmonic generation from Rydberg states with at fixed Keldysh parameter**
BLEDA E. A., YAVUZ İ., ALTUN Z., Topçu T.

- DAMOP12 Meeting of the APS, Orange County, United States Of America, 1 - 03 November 2012, (Summary Text)
- XXVIII. **Dielectronic Recombination in He like Li like and Be like Bismuth and KLM Resonances**
YAVUZ İ.
XXVII INTERNATIONAL CONFERENCE ON PHOTONIC, ELECTRONIC AND ATOMIC COLLISIONS (ICPEAC 2011), PTS 1-15, Belfast, K. Irlanda, United Kingdom, 1 - 03 November 2012, vol.388, pp.62039, (Summary Text)
- XXIX. **Exploring the high order harmonic generation from Rydberg states with a fixed Keldysh parameter**
Poster Q1 00030
BLEDA E. A., YAVUZ İ., ALTUN Z., TOPÇU T.
43rd Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP12), United States Of America, 4 - 08 June 2012
- XXX. **Dielectric Recombination Rate Coefficients of B-Like C (OTURUM NO: 01_OP67)**
YUMAK YAŞI A., YAVUZ İ., BLEDA E. A., KARAKAŞ V., ALTUN Z.
Turkish Physical Society 28th International Physics Congress, Muğla, Turkey, 6 - 09 September 2011, (Summary Text)
- XXXI. **Control of Quantum Path High Order Harmonic Generation via Chaotic Light (OTURUM NO: 01_OP62)**
YAVUZ İ., BLEDA E. A., ALTUN Z.
Turkish Physical Society 28th International Physics Congress, MIUĞLA, Turkey, 6 - 09 September 2011, (Summary Text)
- XXXII. **Dielectronic Recombination in He like Li like and Be like Bismuth and KLM Resonances**
YAVUZ İ., YUMAK A., BLEDA E. A., ALTUN Z.
XXVII International Conference on Photonic, Electronic and Atomic Collisions, Belfast, United Kingdom, 27 July - 02 August 2011, (Summary Text)
- XXXIII. **Control of quantum in high harmonic generation via chaotic light**
YAVUZ İ., BLEDA E. A., ALTUN Z.
28th International Physics Congress, Mugla, Bodrum, Turkey, 1 - 03 November 2011, (Summary Text)
- XXXIV. **Dielectronic recombination rate coefficients of B like C**
YUMAK YAŞI A., YAVUZ İ., BLEDA E. A., Karakaş V., ALTUN Z.
28th International Physics Congress, Mugla, Bodrum, Turkey, 1 - 03 November 2011, pp.114, (Summary Text)
- XXXV. **Recombination Rate Coefficients of Be Like Sulfur**
YUMAK A., YAVUZ İ., BLEDA E. A., ALTUN Z.
ECAMP10, 10th European Conference on Atoms Molecules and Photons, Salamanca, Mexico, 4 - 09 July 2010, pp.34, (Summary Text)
- XXXVI. **ELECTRON IMPACT IONIZATION of Li LIKE SILICON Ref 722**
ALTUN Z., YUMAK YAŞI A., YAVUZ İ., BLEDA E. A.
10th European Conference on Atoms Molecules and Photons (ECAMP 10), Salamanca, Mexico, 4 - 09 July 2010, (Summary Text)
- XXXVII. **Recombination Rate Coefficients of Li Like Sulfur**
YAVUZ İ., YUMAK A., BLEDA E. A., ALTUN Z.
ECamp10, 10th European Conference on Atoms Molecules and Photons, Salamanca, Mexico, 4 - 09 July 2010, pp.50, (Summary Text)
- XXXVIII. **RECOMBINATION RATE COEFFICIENTS of Li LIKE SULFUR Ref 227**
YAVUZ İ., YUMAK YAŞI A., BLEDA E. A., ALTUN Z.
10th European Conference on Atoms Molecules and Photons (ECAMP 10), Salamanca, Mexico, 4 - 09 July 2010
- XXXIX. **Level resolved distorted wave cross sections of electron impact ionization of Ar5**
YAVUZ İ., YUMAK YAŞI A., ALTUN Z.
XXVI International Conference on Photonic, Electronic and Atomic Collisions, Kalamazoo, United States Of America, 1 - 03 November 2009, vol.194, pp.62016, (Summary Text)
- XL. **Electron-Impact Ionization of Atomic Ions: Theoretical Results**
Loch S. D., Burgos J. M. M., Ballance C. P., Ludlow J., Lee T. -, Fogle M., Pindzola M. S., Griffin D. C., Yumak A., Yavuz I., et al.
26th International Conference on Photonic, Electronic and Atomic Collisions, Michigan, United States Of America,

22 - 28 July 2009, vol.194, (Full Text)

XLI. Issues in the computational estimation of free radical polymerization rates the case of methyl acrylate

YAVUZ İ., ÇİFTÇİOĞLU G. A., ALTUN Z.

13th ICQC, Helsinki, Finland, 1 - 03 November 2009, pp.39, (Summary Text)

XLII. Resonances in rate coefficients of Na like Sulphur

YAVUZ İ., YUMAK A., ALTUN Z.

X08, 21st INTERNATIONAL CONFERENCE ON X-RAY AND INNER-SHELL PROCESSES, Paris, France, 22 - 27 June 2008, pp.59, (Summary Text)

XLIII. Excitation Ionization Cross Section Na Like Tin

YUMAK A., Gölçek U., YAVUZ İ., ALTUN Z.

ECAMP IX European Conference on Atoms Molecules and Photons, Heraklion, Greece, 6 - 11 May 2007, pp.1, (Summary Text)

XLIV. Resonances in The Velocity Averaged Dielectronic Recombination Cross Section for Mg like Fe

YUMAK A., ÇİFTÇİOĞLU G. A., YAVUZ İ., ALTUN Z.

IWP International Workshop on Photoionization 2005, Campinas, Brazil, 27 - 31 July 2005, (Summary Text)

Other Publications

I. CEP-Controlled Molecular Dissociation by Ultrashort Chirped Laser Pulses

Yavuz İ.

Technical Report, pp.1-6, 2019

Funded Projects

Değer C., Yavuz İ., EU Supported Other Project, Materials for Ultraefficient chiral SpinTronics, 2023 - 2026

Yavuz İ., TUBITAK Project, Hibrid Perovskite Güneş Pillerinde İçsel Kusurların Atomik Seviyede Belirlenmesi Ve Pasifleştirilmesi, 2020 - 2022

Karakaş S. A., Yavuz İ., TUBITAK Project, Isotope and Mass Asymmetry Effect on CEP-Controlled Molecular Dissociation near Metallic Nanotip, 2020 - 2021

Yavuz İ., Other International Funding Programs, Skymion Bazlı Magnonik Kristallerin Manyetik Özelliklerinin ve Soğurma Spektrumlarının İncelenmesi, 2018 - 2019

Yavuz İ., Project Supported by Higher Education Institutions, Simetrik ve asimetrik alkil-eklenmiş benzo-tiyeno-benzotiyofen (BTBT) organik yarıiletkenlerin moleküler düzen ve yük-taşımlarının tahmin edilmesi, 2017 - 2019

Yavuz İ., TUBITAK Project, Heteroeklem-Tabanlı Organik Fotovoltaik Uygulamalar İçin Dairesel-Oligomer/Fullerene Komplekslerinin Yapısal Düzen ve Yük-Taşımlarının İncelenmesi, 2017 - 2018

Yavuz İ., Project Supported by Other Official Institutions, Antiferromanyetik İyon Katkılı DNA Nanotellerin Elektronik ve Manyetik Özelliklerinin Belirlenmesi, 2016 - 2018

Yavuz İ., Project Supported by Public Organizations in Other Countries, DMREF: Iterative Theoretical Morphology Prediction Synthesis and Characterization of Novel Donor Oligomers for Accelerated Materials Discovery, 2013 - 2018

Yavuz İ., Project Supported by Higher Education Institutions, Tek/çift alkil zincir eklenmesinin benzo-tiyeno-benzothiophenelerin (BTBT) morfoloji ve yük-taşımları üzerine etkisi, 2017 - 2017

Yavuz İ., Project Supported by Higher Education Institutions, 5 12 Sikloparafenilenlerin atomistik morfolojileri ve yük taşımlarının tahmin edilmesi, 2016 - 2017

Yavuz İ., Project Supported by Higher Education Institutions, Atomik Hedeflerden Yüksek Mertebeli Harmonik Üretimde Verim Artırılması, 2006 - 2012

Peer Reviews in Scientific Publications

ADVANCED ENERGY MATERIALS, SCI Journal, May 2019
JOURNAL OF PHYSICAL CHEMISTRY, SCI Journal, November 2018
ADVANCED FUNCTIONAL MATERIALS, SCI Journal, September 2018
ZEITSCHRIFT FUR PHYSIK, SCI Journal, June 2018
JOURNAL OF PHYSICAL CHEMISTRY, SCI Journal, July 2017
OPTICS EXPRESS, SCI Journal, August 2016
JOURNAL OF PHYSICAL CHEMISTRY, SCI Journal, July 2016
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, SCI Journal, May 2016
SCIENTIFIC REPORTS, SCI Journal, April 2016
ACCOUNTS OF CHEMICAL RESEARCH, SCI Journal, January 2014
CHEMICAL PHYSICS, SCI Journal, October 2012

Scientific Project Refereeing

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, July 2019
TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, July 2019
TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, June 2019

Roles in Event Organizations

Yavuz İ., M-BIO2017, Scientific Congress, Kocaeli, Turkey, Eylül 2017

Metrics

Publication: 127
Citation (WoS): 1265
Citation (Scopus): 1362
H-Index (WoS): 17
H-Index (Scopus): 18

Congress and Symposium Activities

Chemistry ViA Computation, Working Group, İstanbul, Turkey, 2017
33th International Physics Congress, Working Group, Muğla, Turkey, 2017
11th WATOC, Working Group, Munich, Germany, 2017
251th ACS National Meeting, Working Group, California, United States Of America, 2016
247th ACS National Meeting, Working Group, Texas, United States Of America, 2014
XXVII ICPEAC, Working Group, Belfast, United Kingdom, 2012
28th International Physics Congress, Working Group, Muğla, Turkey, 2011
ECAMP 10, Working Group, Salamanca, Spain, 2010

Invited Talks

Öğrenci Semineri, Seminar, Koç Üniversitesi, Turkey, June 2012

Awards

Non Academic Experience

Los Angeles, Kaliforniya Üniversitesi, Doktora sonrası araştırmacı

Auburn Üniversitesi, Doktora Sonrası Araştırmacı

Virginia Üniversitesi, Misafir Araştırmacı

Virginia Üniversitesi, Misafir Araştırmacı

Virginia Üniversitesi, Misafir Araştırmacı

Virginia Üniversitesi, Misafir Araştırmacı

Marmara Üniversitesi, Öğretim Görevlisi