

## Asst. Prof. GAMZE KAYA

### Personal Information

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### Education Information

Post Doctorate, Texas A&M University, Science And Petroleum Engineering, Physics/Atomic Molecular And Optical Physics, United States Of America 2016 - 2016

Doctorate, Texas A&M University, Science/Department Of Physics And Astronomy, Atomic Molecular And Optical Physics, United States Of America 2011 - 2015

Masters (Non-Thesis), Canakkale Onsekiz Mart University, Fen Bilimleri Enstitüsü, Fizik Eğitimi, Turkey 2002 - 2003

Undergraduate, Karadeniz Technical University, Fen Edebiyat Fakültesi, Fizik Bölümü, Turkey 1998 - 2002

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Nonadiabatic molecular alignment measurements via photoelectron ionization yields and white-light generation, Texas A&M University, Department Of Physics And Astronomy,, Applied Physics,, 2015

### Research Areas

Physics, Atomic and Molecular Physics, Molecular Properties and Interactions with Photon, Natural Sciences

### Academic Titles / Tasks

Assistant Professor, Canakkale Onsekiz Mart University, Çanakkale Teknik Bilimler Meslek Yüksekokulu, Elektrik Ve Enerji, 2018 - Continues

Assistant Professor, Canakkale Onsekiz Mart University, Çanakkale Teknik Bilimler Meslek Yüksekokulu, Elektrik Ve Enerji, 2017 - 2018

Research Assistant PhD, Texas A&M University, Science And Petroleum Engineering, Physics, 2016 - 2016

Research Assistant, Texas A&M University, Department Of Physics And Astronomy, Physics, 2011 - 2015

### Courses

Optik Spektroskopisi: Yöntemler ve FV Uygulamaları, Postgraduate, 2020 - 2021

Güç Elektroniği II, Associate Degree, 2019 - 2020

Özel Tesisat, Associate Degree, 2019 - 2020

Güç Elektroniği I, Associate Degree, 2020 - 2021  
Temel Elektronik, Associate Degree, 2020 - 2021  
Fizik, Associate Degree, 2020 - 2021  
Ev Cihazları, Associate Degree, 2019 - 2020  
Sözleşme, Keşif ve Planlama, Associate Degree, 2019 - 2020  
Ofis Yazılımları, Associate Degree, 2020 - 2021

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

- I. **Diffractive multifocal lenses by computer-generated holograms**  
KAYA N., KAYA G., Strohhaber J., Zhou J., Kolomenski A., Schuessler H. A.  
Optical Engineering, vol.60, no.5, 2021 (Journal Indexed in SCI)
- II. **In-situ measurement of aligning intensity and rotational temperature in field-free molecular alignment via white light generation**  
Kaya N., Kaya G., Boran Y., Kolomenski A., Schuessler H. A.  
Optik, vol.242, no.167360, pp.1-8, 2021 (Journal Indexed in SCI)
- III. **Field-free molecular alignment of carbon dioxide molecules measured with above-threshold ionization yields**  
KAYA G.  
CANADIAN JOURNAL OF PHYSICS, vol.98, no.4, pp.390-394, 2020 (Journal Indexed in SCI)
- IV. **Controlled formation of femtosecond laser-induced filaments in water**  
KAYA G.  
EUROPEAN PHYSICAL JOURNAL D, vol.74, no.2, 2020 (Journal Indexed in SCI)
- V. **Time slicing in 3D momentum imaging of the hydrogen molecular ion photo-fragmentation**  
KAYA N., Kaya G., Pham F. V., Strohhaber J., Kolomenskii A. A., Schuessler H. A.  
REVIEW OF SCIENTIFIC INSTRUMENTS, vol.88, no.2, 2017 (Journal Indexed in SCI)
- VI. **Nonadiabatic molecular alignment of linear molecules probed by strong-field ionization yields of photoelectrons**  
Kaya G., KAYA N., STROHABER J., Hart N. A., Kolomenskii A. A., Schuessler H. A.  
APPLIED PHYSICS B-LASERS AND OPTICS, vol.122, no.12, 2016 (Journal Indexed in SCI)
- VII. **Effect of circularly polarized femtosecond laser pulses on alignment dynamics of linear molecules observed by strong-field photoelectron yields**  
KAYA N., Kaya G., STROHABER J., Kolomenskii A. A., Schuessler H. A.  
EUROPEAN PHYSICAL JOURNAL D, vol.70, no.10, 2016 (Journal Indexed in SCI)
- VIII. **Extension of filament propagation in water with Bessel-Gaussian beams**  
Kaya G., KAYA N., Sayrac M., Boran Y., Strohhaber J., Kolomenskii A. A., Amani M., Schuessler H. A.  
AIP ADVANCES, vol.6, no.3, 2016 (Journal Indexed in SCI)
- IX. **Probing nonadiabatic molecular alignment by spectral modulation**  
KAYA N., Kaya G., SAYRAC M., Horan Y., ANUMULA S., STROHABER J., Kolomenskii A. A., Schuessler H. A.  
OPTICS EXPRESS, vol.24, no.3, pp.2562-2576, 2016 (Journal Indexed in SCI)
- X. **White-light generation control with crossing beams of femtosecond laser pulses**  
Kolomenskii A. A., STROHABER J., KAYA N., Kaya G., Sokolov A. V., Schuessler H. A.  
OPTICS EXPRESS, vol.24, no.1, pp.282-293, 2016 (Journal Indexed in SCI)
- XI. **Intensity-resolved above-threshold ionization of xenon with short laser pulses**  
Hart N. A., STROHABER J., Kaya G., KAYA N., Kolomenskii A. A., Schuessler H. A.  
PHYSICAL REVIEW A, vol.89, no.5, 2014 (Journal Indexed in SCI)
- XII. **White-light generation using spatially-structured beams of femtosecond radiation**  
KAYA N., STROHABER J., Kolomenskii A. A., Kaya G., SCHROEDER H., Schuessler H. A.  
OPTICS EXPRESS, vol.20, no.12, pp.13337-13346, 2012 (Journal Indexed in SCI)
- XIII. **In situ tomography of femtosecond optical beams with a holographic knife-edge**

Strohaber J., Kaya G., KAYA N., HART N., Kolomenskii A. A. , Paulus G. G. , Schuessler H. A.  
OPTICS EXPRESS, vol.19, no.15, pp.14321-14334, 2011 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Control of laser-induced nonadiabatic molecular alignment in dissipative media**  
Kaya G.  
TURKISH JOURNAL OF PHYSICS, vol.42, no.2, pp.146-156, 2018 (Journal Indexed in ESCI)
- II. **Direct Mass Spectroscopy Analysis and Comparison of Middle Eastern and Texas Crude Oils**  
Kaya G., Kaya N., Amani M., Rahman A., Kolomenski A., Schuessler H.  
International Journal of Organic Chemistry, vol.7, no.4, pp.312-318, 2017 (Journal Indexed in ESCI)

## Books & Book Chapters

- I. **Nonadiabatic Molecular Alignment of Linear Molecules Probed by Strong-Field Ionization Yields of Photoelectrons**  
KAYA G., KAYA N., Strohaber J., Hart N., Kolomenskii A., Schuessler H.  
in: Exploring the World with the Laser, Dieter Meschede, Thomas Udem, Tilman Esslinger, Editor, Springer, Cham, pp.577-595, 2018

## Refereed Congress / Symposium Publications in Proceedings

- I. **Holographic Airy Beams as good accelerating light sources for energy**  
Kaya G.  
TURKISH PHYSICAL SOCIETY 37th INTERNATIONAL PHYSICS CONGRESS, Muğla, Turkey, 1 - 05 September 2021, pp.94
- II. **Study of wireless energy transmission by different laser modes**  
KAYA N., KAYA G.  
INTERNATIONAL GLOBAL CLIMATE CHANGE CONGRESS, Çanakkale, Turkey, 03 June 2021
- III. **Creating Airy beams as directed and concentrated energy**  
KAYA G., AVCI S., KAYA N., KURT A., KURT M.  
INTERNATIONAL GLOBAL CLIMATE CHANGE CONGRESS, Çanakkale, Turkey, 03 June 2021
- IV. **Generation of Programmable Diffractive Multi-Focal Lenses**  
KAYA N., KAYA G.  
4th International Conference on Physical Chemistry and Functional Materials (PCFM'21), Elazığ, Turkey, 08 April 2021
- V. **Generation of Programmable Diffractive Lenses with Multiple or Multi-Optical Axes, Multi-Focus, Dynamic Distance Control of Focal Lengths and Energy Intensities at Foci**  
Çelik G., KAYA G., KURT M., KAYA N.  
TURKISH PHYSICAL SOCIETY 35th INTERNATIONAL PHYSICS CONGRESS (TPS35), 4 - 08 September 2019, vol.1, pp.27-30
- VI. **Femtosecond Laser-Induced Filamentation Control in Liquids**  
Keskin A., KAYA G., KAYA N.  
TURKISH PHYSICAL SOCIETY 35th INTERNATIONAL PHYSICS CONGRESS (TPS35), 4 - 08 September 2019, vol.1, pp.50-53
- VII. **Design of an Ultra-Sensitive Optical Sensor for Atmospheric Level Methane Measurement**  
KESKİN A., KAYA G., KAYA N.  
TURKISH PHYSICAL SOCIETY 35th INTERNATIONAL PHYSICS CONGRESS (TPS35), 4 - 08 September 2019, vol.1,

- VIII. **Laser induced molecular alignment of CO<sub>2</sub> measured with ATI yields**  
KURT M., KAYA G., KURT A., KAYA N.  
TFD35: Turkish Physical Society 35. International Physics Congress, Bodrum, Turkey, 4 - 08 September 2019
- IX. **STUDY OF THREE-DIMENSIONAL MOMENTUM IMAGING DURING H<sub>2</sub> PHOTO-FRAGMENTATION**  
KAYA N., KAYA G., ALEXANDRE A. K., KURT M., SCHUESSLER H.  
TURKISH PHYSICAL SOCIETY 33RD INTERNATIONAL PHYSICS CONGRESS, Bodrum, Turkey, 6 - 10 September 2017
- X. **Analysis of the components of the crude oil samples with no sample pretreatment**  
KAYA G., KAYA N.  
TFD33: Turkish Physical Society 33rd International Physics Congress, Bodrum, Turkey, 6 - 09 September 2017
- XI. **Laser induced field-free molecular alignment in dissipative media**  
KAYA G., KAYA N.  
TFD33: Turkish Physical Society 33rd International Physics Congress, Bodrum, Turkey, 6 - 09 September 2017
- XII. **Pressure dependence on nonadiabatic molecular alignment**  
KAYA G., KAYA N.  
Turkish Physical Society 33rd International Physics Congress, Bodrum, Turkey, 6 - 10 September 2017
- XIII. **Photo-fragmentation of H<sub>2</sub> with femtosecond laser pulses by employing a time-sliced 3D imaging technique**  
KAYA N., KAYA G., JAMES S., ALEXANDRE K., KURT M., HANS S.  
Turcmos 2017, Bodrum, Turkey, 26 June - 29 July 2017
- XIV. **Nonadiabatic molecular alignment of linear molecules using circularly polarized femtosecond laser pulses**  
KAYA N., KAYA G.  
TURCMOS 2017: The 3rd International Turkish Congress on Molecular Spectroscopy, Bodrum, Turkey, 26 - 29 August 2017
- XV. **Spatio-Temporal Control of Femtosecond Laser Filamentation and White-Light Generation**  
KAYA N., KAYA G., STROHABER J., KOLOMENSKII A., SCHUESSLER H.  
32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815
- XVI. **Spatio temporal control of filamentation and white light generation**  
KOLOMENSKI A., KAYA N., KAYA G., STROHABER J., SCHUESSLER H.  
LPHYS'16: 25th Annual International Laser Physics Workshop, Yerevan, Armenia, 11 - 15 July 2016
- XVII. **Manifestations of Induced Molecular Alignment in the Interaction of Ultrafast Laser Pulses with Gases**  
KOLOMENSKI A., KAYA N., KAYA G., SAYRAC M., BORAN Y., STROHABER J., SCHUESSLER H.  
LPHYS'16: 25th Annual International Laser Physics Workshop, Yerevan, Armenia, 11 - 15 July 2016
- XVIII. **Photo electron yields of linear molecules aligned by circularly polarized femtosecond laser pulses**  
KAYA G., KAYA N., KOLOMENSKI A., SCHUESSLER H.  
SWUFC-2016 Southwest Ultrafast Conference, AUSTIN, United States Of America, 16 - 17 June 2016
- XIX. **Impulsive molecular alignment control on filamentation**  
KAYA N., KAYA G., KOLOMENSKI A., SCHUESSLER H.  
SWUFC-2016 Southwest Ultrafast Conference, AUSTIN, United States Of America, 16 - 17 June 2016
- XX. **Sensitive Molecular Spectroscopy of crude oil and well gas**  
KAYA G., KAYA N., Amani M., Kolomenskii A. A., Schuessler H. A.  
Forcing partnerships to meet challenges: The 5th annual Research-Industry Partnership Showcase, Doha, Qatar, 15 May 2016
- XXI. **Intensity resolved above-threshold ionization of xenon with short laser pulses**  
Hart N. A., Strohaber J., KAYA G., KAYA N., Kolomenskii A. A., Schuessler H. A.  
SIBOR 2015 -Workshop, Texas, United States Of America, 6 - 07 November 2015
- XXII. **Time sliced 3D momentum imaging of Hydrogen ion photofragmentation**  
KAYA N., KAYA G., STROHABER J., KOLOMENSKI A., SCHUESSLER H.

SIBOR 2015- Workshop, Cook's Branch Conservancy, MONTGOMERY, TEXAS, United States Of America, 06 November 2015

- XXIII. **Molecular alignment control of filamentation**  
KAYA N., KAYA G., SAYRAC M., ANUMULA S., BORAN Y., KOLOMENSII A., AMANI M., SCHUESSLER H.  
ATTO2015: 5th International conference on Attosecond Physics. July 6-10, 2015 in Saint-Sauveur, Québec, Canada, Saint-Sauveur, Canada, 6 - 10 July 2015
- XXIV. **Filament propagation length of femtosecond pulses with Gaussian and Bessel Gaussian modes**  
KAYA N., MUHAMMED S., KAYA G., BORAN Y., JAMES S., ALEXANDRE K., HANS S.  
Bulletin of the American Physical Society: Fall 2014 Joint Meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the Society of Physics Students, United States Of America, 17 - 19 October 2014, vol.59
- XXV. **Time sliced 3D momentum imaging of H2 photofragmentation**  
KAYA N., KAYA G., STROHABER J., KOLOMENSKI A., SCHUESSLER H.  
ICAP 2014: 24th International Conference on Atomic Physics, August 3-8, 2014, Washington D.C., Washington, Kiribati, 3 - 08 August 2014
- XXVI. **Effect of different transverse modes of femtosecond pulses on filament propagation**  
KAYA N., KAYA G., SAYRAC M., STROHABER J., KOLOMENSKI A., SCHUESSLER H.  
ICAP 2014: 24th International Conference on Atomic Physics, August 3-8, 2014, Washington D.C., Washington, Kiribati, 3 - 08 August 2014
- XXVII. **Pressure optimization of HHG for bio-chemical applications**  
Sayraç M., Kolomenskii A. A. , Anumula S., Boran Y., KAYA G., KAYA N., Schuessler H.  
SIBOR2014- Workshop, Montgomery, Teksas, United States Of America, 07 November 2014 - 01 November 2013
- XXVIII. **Time sliced 3D imaging of photodissociation of H2 at 800nm**  
KAYA N., PHAM F., KAYA G., STROHABER J., KOLOMENSKI A., PAULUS G., SCHUESSLER H.  
SIBOR 2013- Workshop, Cook's Branch Conservancy, MONTGOMERY, TEXAS, United States Of America, 01 November 2013
- XXIX. **White light generation by intense femtosecond pulses with different transverse modes A detailed study on Bessel beam propagation**  
KAYA N., SAYRAC M., KAYA G., STROHABER J., KOLOMENSKI A., SCHUESSLER H.  
SIBOR 2013 - Workshop, Cook's Branch Conservancy, MONTGOMERY, TEKSAS, United States Of America, 01 November 2013
- XXX. **Molecular rotational constants of N2, O2, CO, and C2H2 measured with photoelectron ionization yield**  
KAYA G., KAYA N., Hart N. A. , Sayraç M., Anumula S., Strohaber J., Kolomenskii A. A. , Amani M., Schuessler H. A.  
SIBOR 2014 - Workshop, Montgomery, Teksas, United States Of America, 07 November 2014 - 01 November 2013
- XXXI. **White-light generation by intense femtosecond pulses with different transverse modes**  
KAYA N., Sayraç M., KAYA G., Strohaber J., Kolomenskii A. A. , Schuessler H. A.  
SIBOR 2013 - Workshop, Montgomery, Teksas, United States Of America, 01 November 2012 - 01 November 2013
- XXXII. **Enhancement or suppression of white light generation at the interaction of crossing femtosecond laser beams**  
KAYA N., KOLOMENSKI A., KAYA G., SCHROEDER H., STROHABER J., SCHUESSLER H.  
SIBOR 2013- Workshop, Cook's Branch Conservancy, MONTGOMERY, TEKSAS, United States Of America, 01 November 2013
- XXXIII. **Revival structures of N2 Molecules in Field-Free Alignment by Above Threshold Ionization**  
KAYA G., Strohaber J., KAYA N., Hart N., Kolomenskii A. A. , Schuessler H. A.  
SIBOR 2013 - Workshop, Montgomery, Teksas, United States Of America, 01 November 2013
- XXXIV. **White light generation using spatially structured beams of femtosecond radiation**  
KAYA N., STROHABER J., SCHROEDER H., KOLOMENSKI A., KAYA G., PAULUS G., SCHUESSLER H.  
ICAP 2012: The 23rd International Conference on Atomic Physics, 23-27 July 2012 Ecole polytechnique, Palaiseau-France, Palaiseau, France, 23 - 27 July 2012

## Supported Projects

KAYA G., KAYA N., KURT M., KURT A., Project Supported by Higher Education Institutions, Faz temelli uzamsal ışık modölatörü kullanarak holografik Airy ışınlarının üretilmesi, 2021 - Continues

Kaya G., Kaya N., TUBITAK Project, Eş Eksenli Ya Da Çok Eksenli, Çok Odaklı Programlanabilir Holografik Difraktif Lenslerin Üretilmesi, 2020 - 2023

KURT M., ÇİFTÇİ B. Ç. , KAYA G., Project Supported by Higher Education Institutions, PİEZOELERKTRİK TABANLI AKUSTİK FREKANS ÇÖZÜMLEYİCİ, 2019 - 2021

## Memberships / Tasks in Scientific Organizations

Amerikan Fizik Topluluğu / American Physical Society (APS), Member, 2014 - 2015

## Citations

Total Citations (WOS):98

h-index (WOS):7