CURRICULUM VITAE

Önder Metin, Ph.D.

Associate Professor (Tenured)

Department of Chemistry, College of Sciences, Koç University, 34450 Istanbul, TURKEY
Tel: +90 (212) 3380942 **e-mail:** ometin@ku.edu.tr

Website: https://metinresearchgroup.ku.edu.tr/

1. Education:

Sept. 2006- Dec. 2010	**Ph.D. in Chemistry (GPA: 4.0/4.0),** Graduate School of Natural and Applied Sciences, Middle East Technical University, Ankara, TURKEY, **Supervisor:** Prof. Dr. Saim ÖZKAR
Sep 2004-June 2006	**M.Sc. in Chemistry (GPA: 3.6/4.0),** Graduate School of Natural and Applied Sciences, Middle East Technical University, Ankara, TURKEY, **Supervisor:** Prof. Dr. Saim ÖZKAR
Sep 1998-July 2002	**B.Sc. in Chemistry (GPA: 3.2/4.0, second honor degree)** Faculty of Art and Science, Çukurova University, Adana, Turkey.

2. Professional appointments:

Associate Professor, September 2018-
Department of Chemistry, College of Sciences, Koç University, Istanbul, Turkey.
Associate Professor, October 2013-August 2018
Department of Chemistry, Faculty of Science, Atatürk University, Erzurum, Turkey.
Assistant Professor, 2011-2013
Department of Chemistry, Faculty of Science, Atatürk University, Erzurum, Turkey.
Post-Doctoral Research Associate, 2012-2013
Department of Chemistry, Brown University, Providence, RI 02906, USA
Advisor: Prof. Dr. Shouheng Sun
TUBİTAK Research Project Fellow, July 2012-October 2012
Inorganic Chemistry Institute, Technical University of Darmstadt, Darmstadt, Germany.
Host Scientist: Prof. Dr. Jörg J. Schenider
TUBITAK 2214 Research Fellow, June 2009-December 2009
Department of Chemistry, Brown University, Providence, RI 02906, USA
Host Scientist: Prof. Dr. Shouheng Sun
Teaching/Research Assistant, 2004-2011
Department of Chemistry, Middle East Technical University, Ankara, Turkey.

3. Academic awards, honors, and fellowships:

1. Associate Member of Turkish Academy of Sciences (TUBA), **2021-2026 (Second term).**
2. Koç University Outstanding Faculty Award, **2020**.
3. Associate Member of Turkish Academy of Sciences (TUBA), **2018-2021.**
4. The Scientific and Technological Research Council of Turkey (TÜBİTAK) "*Research Encouragement Award*", **2017**.
5. Scientific Heroes Association, "The Scientist of the Year Award", **2017.**
6. Science Academy, "*The Outstanding Young Scientists Award" (BAGEP),* ***2017***.
7. Tsinghua University Press "*Nano Research Top Papers Award*", **2016 and 2017**.
8. Atatürk University Rectory Scientific Encouragement Program "*The First Rank of the Total Citation Category*", **2016.**

9. Feyzi Akkaya Science Foundation (FABED), *"Eser Tumen Outstanding Young Scientist Award"*, **2015.**
10. Tsinghua University Press "*Nano Research Top Papers Award*", **2015**.
11. The Prize Given for the Horizon-2020 Project Proposals Being above the Threshold of Consciousness, TUBITAK, **2015.**
12. Atatürk University Rectory Scientific Encouragement Program "*The First Rank of the Highest Impact Factor Paper Category*", **2015.**
13. Turkish Academy of Sciences "*The Outstanding Young Scientists Award*" (TÜBA-GEBİP), **2014**.
14. Atatürk University Rectory Scientific Encouragement Program "*The First Rank of the Highest Impact Factor Paper Category*", **2014.**
15. Middle East Technical University Prof. Dr. Mustafa N. PARLAR Education and Research Foundation Awards "*Research Encouragement Award*", **2013**.
16. Atatürk University Rectory Scientific Encouragement Program "*The First Rank of the Highest Impact Factor Paper Category*", **2013.**
17. The Scientific and Technological Research Council of Turkey Fellow to attend "*63rd Lindau Nobel Laurates Meeting*", Lindau, Germany, **2013.**
18. The Post-Doctoral Research Associate, Department of Chemistry, Brown University, **(2012-2013).**
19. The 9th of Serhat ÖZYAR 'Young Scientist of the Year Prize', Middle East Technical University **(2011).**
20. TUBITAK 2214-Research Fellow for Studying Abroad during Ph.D., **2009.**

4. Research Interests:

Transition metal nanoparticles: synthesis and characterization of monometallic and bimetallic alloy or core-shell nanoparticles and their catalytic applications in diverse fields.
2D Materials and their heterojunctions: Chemical route to synthesize a variety of 2D materials including reduced graphene oxide, mesoporous graphitic carbon nitride, molybdenum disulfide (MoS_2), tungsten disulfide, black phosphorus, bismuthene and their hybrids to develop heterojunctions and use them as support material for the transition metal nanoparticles or non-metallic photocatalysts in diverse applications.
Nanocomposites: Preparation and characterization of different types of novel nanocomposites comprising the 2D materials and metal/metal oxide nanoparticles for various applications.
Nanocatalysis/Heterogeneous Catalysis: application of transition metal-based nanocatalysts in various organic and inorganic reactions.
Photocatalysis: The design and fabrication of novel photocatalysts and their photocatalytic applications in organic synthesis, dye/drug removal from waste waters and CO_2/N_2 conversion.
Heterojunction photocatalyst: The rational design and synthesis of heterojunction photocatalysts composed of 2D semiconducting materials, other semiconductor materials and metal nanoparticles.
Photoredox catalysis: Various chemical transformations proceeding on C-H functionalization by using semiconducting 2D materials and their heterojunctions as photoredox catalysts.
Catalytic reactions: Dehydrogenation of B-N-H compounds (ammonia-borane, hydrazine borane and morpholine borane), formic acid dehydrogenation, sustainable organic transformations (transfer hydrogenation, C-C coupling reactions, C-H functionalization, and etc), and development of energy and cost-efficient methods in organic synthesis in the context of green chemistry.

Electrochemical studies: Electrode design and fabrication for the universally important reactions such as oxygen reduction reaction (ORR), hydrogen evaluation reaction (HER), oxygen evolution reaction (OER) and the electrochemical CO_2 reduction.
Rechargeable Lithium batteries and Fuel Cells: Preparation of active electrode materials for the high-performance rechargeable Lithium (Li-ion and Li-air) batteries and PEM fuel cells.

5. Services:

5.1. Community Services

Titular member, IUPAC Inorganic Chemistry Division (Division II), January 2024-
Vice-president; Turkish Chemical Society**,** May 2023-
Mentor; Türkiye Student Team, 56th International Mendeleev Chemistry Olympiads, 09-15 May, Tashkent, Uzbekistan.
Associate Editor-in-Chief; Turkish Journal of Chemistry (TÜBİTAK), 2022-
Guest Editor, Materials Today Proceedings, 2022.
National Representative (re-appointed); IUPAC Inorganic Chemistry Division (Division II)**,** 2019-2021, 2021-2023.
Mentor; TÜBİTAK 2248- Mentoring Support Program for Outstanding Chemistry Undergraduate students, 2020-
Scientific Member; Virtual Chemistry Laboratory Development Team, The Higher Education Council of Turkey (YÖK).
Scientific Committee Member and a scientific author; 52rd International Chemistry Olympiads (IChO 2020), 23-29 July 2020, Istanbul, Turkey.
Vice-chair; 32rd National Chemistry Congress-Online, September 17-19, 2020.
Secretary General Elect; Federation of Asian Chemical Societies (FACS), 2019-
Executive Board Member; Federation of Asian Chemical Societies (FACS), Dec 2019-
Mentor; Turkish Student Team, 51st International Chemistry Olympiads, 21-30 July, Paris, France
Executive Board Member of Turkish Chemical Society, 2018-
Advisory Board Member, TÜBİTAK ARDEB KBAG**,** 2017-2019
Subject Editor, Turkish Journal of Chemistry, 2013-2022.
Control Commission Member, Turkish Catalysis Society, 2013-2017
Vice-Chair: East Anatolian High Technology Research and Application Center (DAYTAM), 2015-2017
Academic Consultant, City of Adana Water and Sewerage Works Management (ADANA ASKİ), 2015-2017.
Reviewer, ***Nature Publishing Journals*** (Nature Communications and Scientific Reports), ***ACS Journals*** (Journal of the American Chemical Society, ACS Nano, ACS Catalysis, Chemistry of Materials, ACS Applied Materials&Interfaces, ACS Applied Nano Materials, ACS Applied Energy Materials, Industrial&Engineering Chemistry Research, Journal of Physical Chemistry C, ACS Sustainable Chemistry&Engineering, Crystal Growth&Design, Langmuir), ***Wiley Journals*** (Angewandthe Chemie International Edition, Small, Advanced Functional Materials, Advanced Materials, Applied Organometallic Chemistry, ChemCatChem, ChemSusChem, ChemistrySelect, Chemistry: A European Journal, Energy and Environmental Materials), ***RSC Journals*** (Chemical Scince, ChemComm., Energy&Environmental Science, Nanoscale, Journal of Materials Chemistry A, Journal of Materials Chemistry C, New Journal of Chemistry, Catalysis Science&Technology, RSC Advances, Inorganic Chemistry Frontiers, Materials Chemistry Frontiers), ***Elsevier Journals***

(Applied Catalysis B: Environmental, Applied Catalysis A: General, International Journal of Hydrogen Energy, Catalysis Today, Applied Surface Science, Chemical Engineering, Materials&Design, Surfaces&Interfaces, Sustainable Chemistry and Pharmacy, Composites Part B, Chemical Engineering Journal, Journal of Cleaner Production), *Springer Journals* (Reaction Kinetics, Mechanism, and Catalysis, Catalysis Letters, Topics in Catalysis).
(**Number of the reviewed manuscripts:** *30 manuscripts in 2013, 49 manuscripts in 2014, 40 manuscripts in 2015, 40 manuscripts in 2016; 58 manuscripts in 2017; 50 manuscripts in 2018, 52 manuscripts in 2019, 35 manuscripts in 2020, 42 manuscripts were reviewed in 2021, 35 manuscripts were reviewed in 2022, 20 manuscripts have been reviewed so far*)

5.2. Academic Services

Post-docs Mentoring

1) **Dr. Natarajan Palani**, July 2022-, 2236-CoCirculation Brain Funding Program
2) **Dr. Johann Bosson**, March 2021-, 2236-CoCirculation Brain Funding Program
3) **Dr. Sibel Erken Korkut**, February 2019-
4) **Dr. Melek Şermin Özer**, June 2020-
5) **Dr. Orhan Altan,** Mersin University, Feb 2019-Feb 2020
6) **Dr. Erbay Kalay,** Kars Kafkas University, March 2019-March 2020
7) **Dr. Sepideh Behboudikhuevi,** May 2019-May 2020
8) **Dr. Paria Eghbali,** Girne American University, Feb 2017- Feb 2018

Supervised Thesis (completed):
Ph.D. Thesis

1) **Melike Sevim,** The Development of High-Performance Electrode Materials for Rechargeable Lithium Batteries, **09 February 2018.**
2) **Hasan Can,** Bimetallic **M**Ru (**M:** Co, Ni, Cu) Alloy Nanoparticles: Synthesis, Characterization and Catalytic Applications, *Ph.D. Thesis*, **01 August 2019.**
3) **Merve Aksoy,** Development of Highly Efficient Platinum Nanocatalysts for the Dehydrogenation of Ammonia Borane via Rational Design of Graphitic Carbon Nitride-Based Heterojunction Photocatalysts, *Ph.D. Thesis***, 09 July 2021.**
4) **Ibtihel Zaier,** Metal Nanoparticles Supported on Graphene Hydrogel: One-pot Synthesis and Catalytic Efficiency in Hydrogen Production from Hydrolysis of Ammonia Borane, **17 December 2021.**
5) **Zafer Eroğlu,** The Synthesis Of Metal-Free Quantum Dots And The Design Of Their Heterojunctions With 2d Materials For Photocatalytic Applications**, August 12, 2022.**
6) **Yunus Zozik,** The Synthesis Of Bimetallic M-Pd (M: Co, Ni, Cu) Alloy Nanoparticles Supported On Magnetically Recoverable Reduced Graphene Oxide and Investigation Of Their Catalytic Performance in C-H Arylation Reactions, **November 25, 2022**.

Master Thesis

1. **Buket Kılıç,** Pd Nanoparticles Supported on Reduced Graphene Oxide: Preparation, Characterization and Catalytic Activity For Hydrolytic Dehydrogenation of Ammonia Borane *MSc Thesis*, **08 June 2012**.

2. **Hasan Can,** A Facile Synthesis of Nearly Monodisperse Ruthenium Nanoparticles and Their Catalysis in The Hydrolytic Dehydrogenation Of Ammonia Borane for Chemical Hydrogen Storage, *MSc Thesis*, **10 July 2013**.
3. **Sümeyra Diyarbakır,** Monodisperse Copper-Palladium Alloy Nanopartıcles Assembled on Reduced Graphene Oxide as Highly Effective Catalysts for the Sonogashıra Cross-Coupling Reactions, *MSc Thesis*, **27 December 2014.**
4. **Nesibe Sedanur Çiftçi**, Monodisperse Nickel-Palladium Alloy Nanoparticles Supported on Reduced Graphene Oxide as Highly Efficient Catalysts for the Hydrolytic Dehydrogenation of Ammonıa Borane, *MSc Thesis*, **02 January 2015.**
5. **Katip Korkmaz,** Tandem Dehydrogenation of Ammonıa Borane and Hydrogenation of Nitro/Nitrile Compounds Catalyzed by Graphene-Supported NiPd Alloy Nanoparticles, *MSc Thesis*, **08 January 2015.**
6. **Kübra Güngörmez,** Cu3Pd Alloy Nanoparticles Supported on Reduced Graphene Oxide as Active and Economical Catalysts for the Hydrolytic Dehydrogenation of Ammonia Borane, *MSc Thesis*, **15 January 2015.**
7. **Gülşah Çelikdağ,** The Synthesis Of Magnetic Cobalt Ferrite/Graphene Oxide And Cobalt Ferrite/Reduced Graphene Oxide Nanocompozites, Their Characterization And Application In The Dye Removal From Aqueous Solution, **12 August 2016.**
8. **Seda Ergen,** Monodisperse AgPd Alloy Nanoparticles Supported on Mesoporous Graphitic Carbon Nitride as Highly Efficient Catalyst for the Reductive Amination of Nitroarenes via Transfer Hydrogenation, *M.Sc. Thesis*, **March 2018.**
9. **Tuğba Karaca**, A Facile Synthesis of Monodisperse CuPt Alloy Nanoparticles and Their Superb Catalysis in the Hydrolytic Dehydrogenation of Ammonia Borane and Hydrazine Borane, *M.Sc. Thesis,* **July 2018.**
10. **Muhammet Turgut,** Three-Component Cascade Reaction in a Pressure Tube: In-situ Generation of Palladium Nanoparticles Supported on Mesoporous Graphitic Carbon Nitride, Dehydrogenation of Ammonia Borane and Hydrogenation of Nitroarenes, *M.Sc. Thesis*, **August 2018.**
11. **Buse Sündü,** The synthesis of monodisperse NiRu alloy nanoparticles as catalyst for the dehydrogenation of morpholine borane, *M.Sc. Thesis*, **October 2018.**
12. **Dilan Aksoy (Co-supervisor),** Rational Design of Silver/Platinum Core/Shell Nanoparticles as Catalysts for Electrochemical Hydrogen Production and Oxygen Reduction Reaction, *M.Sc Thesis*, **August 2019.**
13. **Hüseyin Küçükkeçeci,** Design and Synthesis of a Black Phosphorus-Based Heterojunction Photocatalyst for Hydrogen Generation from Methanolysis of Ammonia Borane, *M.Sc. thesis***, July 2020.**
14. **Ahsen Sare Yalın,** Mesoporous Graphitic Carbon Nitride Supported CoPd Alloy Nanoparticles as Catalysts for Various Reactions of Terpenes, **August 12, 2022.**
15. **Sıla Alemdar,** Graphitic Carbon Nitride/Red Phosphorus Heterojunctions Decorated with Platinum Nanoparticles as Catalysts for the Photo-assisted Hydrolysis of Ammonia Borane, **March 2023,**

<u>Supervised Thesis (Ongoing):</u>

1. **Begümhan Karapınar,** *Ph.D. Canditate*, Design of Heterogeneous Photocatalysts for the Tandem Photocatalytic Hydrogen Evolution and Transfer Hydrogenation Reactions Using Water as the Hydrogen Source**,** February 2019-,
2. **Buse Sündü,** Ph.D. student, **February 2020-**,

3. **Aleyna Başak,** Ph.D. student, **September 2021-**,
4. **Temirlan Kurbanaliev,** M.Sc. student, **September 2020-,**
5. **Tuana Ayla Demircioğlu, September 2022-,**

6. TEACHING ACTIVITIES

I have thought many courses both at undergraduate and graduate levels for 10 years. The summary of all of my teaching activities in the last decade is given below.

- ***Inorganic Chemistry I, II*** (Undergrad level, 2011-2018 every year Fall and Spring semesters, avg. 40 students/per semester) at Department of Chemistry, Atatürk University, Turkey
- ***Advanced Inorganic Chemistry*** (Graduate level, 2011-2018 every year Fall and Spring semesters, avg. 10 students/per semester) at Department of Chemistry, Atatürk University, Turkey.
- ***General Chemistry*** (Undergrad level for Medicine School and Engineering students, 2018-2022, 2023 every year Fall and Spring semesters, avg. 90 students) at Department of Chemistry, Koç University, Turkey.
- ***Coordination Chemistry and Catalysis*** (Undergrad level, Spring 2020, 6 students), at Department of Chemistry, Koç University, Turkey.
- ***Advanced Inorganic Chemistry*** (Graduate level, Spring 2019, 20020, and 2021, 2022, and 2023, avg. 10 students) at Department of Chemistry, Koç University, Turkey.
- ***Advanced Instrumental Techniques for Materials Characterization*** (Graduate level, Fall 2022 22 students) at Graduate School of Science and Engineering, Koç University, Turkey.
- Besides these teaching activities at universities, I have also thought Inorganic Chemistry for the National/International Chemistry Olympiad students for 7 years. I am also active author for preparing problems for the National/International Chemistry Olympiad exams.

7. INSTITUTIONAL RESPONSIBILITIES

2018 – *Associate Member*, Turkish Academy of Sciences (TUBA)
2019 – *Organizer of the Departmental Seminars*, Dept. of Chemistry, Koç University, Turkey.
2019- *National Representative*, Division II (Inorganic Chemistry), IUPAC
2019 – *Secretary General Elect*, Federation of Asian Chemical Societies (FACS)
2018 – *Member of the Executive Board*; Turkish Chemical Society, Turkey.
2016 – 2018 *Member of the Faculty Committee*, Faculty of Science, Atatürk University.
2016 – 2018 Advisory Board Member, Chemistry Research Group, TUBITAK.
2016 – 2018 *Vice Chair*, East Anatolian Application and Research Center (DAYTAM), Atatürk University, Turkey.
2019 – 2020 *Scientific Committee Member*, 52rd Int. Chemistry Olympiads (IChO 2020), Istanbul, Turkey.

8. MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2015– Member, Turkish Chemical Society (TCS)
2018- Member, International Union of Pure and Applied Chemistry (IUPAC)
2019- Member, Federation of Asian Chemical Societies (FACS)

9. Projects/Grants

Ongoing:

1) **Principal Investigator,** Two-Dimensional Semiconductor Pnictogens: Next-Generation Photocatalysts for Solar-Driven Sustainable Organic Transformations, TÜBİTAK 2247A-National Leader Researcher Support Program, 121C333, 2022-2025. (2.7 M TL)
2) **Principal Investigator,** Fabrication of Covalent Organic Frameworks-Based Noble Metal Single Atomic Site Photocatalytic Materials for the Photo-Assisted Lithium-Oxygen Battery, TÜBİTAK-China National Science Foundation (NSF) Bilateral Research Project, 122N458, (1.2 M TL).
3) **Principal Investigator,** Rational design of 2D Pnictogen-MOF hybrids as photocatalysts for the visible light-mediated C–X (X ≡ C, N) bond forming reactions, TÜBİTAK-Chinese Academy of Science (CAS) Bilateral Research Project, 120N541, Feb 2023-Feb 2026 (1.5 M TL).
4) **Principal Investigator,** The Design and Synthesis of Black Phosphorus Based Heterojunction Photoredox Catalysts for the C-H Arylation of Heteroarenes under Visible Light Irradiation, TÜBİTAK 1001, 120Z622, 2021-2023. (789,000,00 TL)
5) **Researcher,** Value-Added Advanced Nanotechnological Materials and Systems for Sustainable Circular Economy– Lignonano, 1004- Mükemmeliyet Merkezi Destek Programı, 22AG045, December 2022-December 2026. (20 M TL)
6) **Researcher**, Design and Mechanism of Next-Generation Heterojunction Structures Based on Metal-Free P-, N-, S-Doped GQDs for Selective Photooxidation of Organic Molecules under Visible Light, TÜBİTAK 1001,123Z056, April 2023-April 2025 (1.2 M TL).
7) **Consultant,** Investigation of All Activities of Monolayer Symmetrical and Non-Symmetrical Tmdc Structures with Controlled Surface Modifications, TÜBİTAK 1001, April 2022- April 2025. (1 M TL)
8) **Consultant**, Design and Synthesis of New Photocatalysts for the Co-Production of Hydrogen and gamma-valerolactone from Formic Acid/Levunilic Acid Mixture, TÜBİTAK 3501 Project, 2021-2023.
9) **Consultant;** Investigation of Effects Of Boric Acid and Zinc Borate-Containing Graphene Hydrogels in Second Degree Burn Healing in Rats, TÜBİTAK 1001 Project, 2020-2022.

Accomplished:

16) Researcher; The Synthesis of Nano Lithium Nickel Cobalt Oxide (NCA) Material as Cathode Materials for Li-ion batteries, TÜBİTAK 1003 Project, 118M149, 2019-2022.

15) Researcher; Synthesis of Mesoporous Graphitic Carbon Nitride/Black Phosphorus/Metal Sulfide (mpg-mpg-C_3N_4/BP/MS_2 (M:Mo,W) ve mpg-C_3N_4/BP/MS_2-Y (Y:Ni,Co, M:Mo,W) Nanohybride Materials and Investigation of Hydrogen Evolution Performances from Photocatalytic Water Splitting, 119Z497 2020-2022. (689,000,00 TL)

14) Principal Investigator, A facile route to in situ synthesis of mesoporous graphitic carbon nitride (mpg-C_3N_4) supported metal nanoparticles as catalysts for the conversion of terpenes into the value-added products**,** TÜBİTAK-Morocco Bilateral Project, 119Z199, 2020-2022. (770,000 TL)

13) Consultant; The Synthesis of Bimetallic M-Palladium (M: Co, Ni, Cu) Alloy Nanoparticles Supported on Magnetically Recoverable Reduced Graphene Oxide and Investigation of Their

Catalytic Performance in C-H Arylation/Alkylation Reactions, TÜBİTAK 1001 Project, 118Z724, 2019-2021. (589,000 TL)

12) Principal Investigator, Covalent Functionalized Black Phosphorous as a Novel Nanoplatform for the Cancer Theranostics, Koç University Seed Funding Program, 2019-2021. (50,000 TL)

11) Principal Investigator; Bimetallic Ruthenium Alloy Nanoparticles Supported on Graphene as Highly Efficient, Economical and Reusable Catalysts: Synthesis, Characterization and Catalytic Applications, TÜBİTAK 1001 Project, 116Z226, 2017-2019 (367,367.00 TL)

10) Researcher; Synthesis, Characterization of N-heterocyclic Carbene-Stabilized Metal Nanoparticles and Their Catalytic Applications, TÜBİTAK 1001 Project, 116Z189 2017-2019, (254,161 TL)

9) Principal Investigator, Polymer stabilized transition metal nanoclusters as catalysts, METU BAP-08-11-DPT2002K120510, 2006-2010 (Bütçe: 40,000 TL)

8) Principal Investigator; Palladium Nanoparticles Supported on Chemically Derived Graphene: Synthesis, Characterization and Catalytic Activity in the Dehydrogenation of Ammonia Borane, Atatürk University Research Projects Council, 2011-2013 (35,000 TL).

7) Principal Investigator; Synthesis and Characterization of FeAuPd and FeAgPd Alloy Nanoparticles as Catalyst for the Formic Acid Dehydrogenation under Mild Conditions, Atatürk University, Research Projects Council, 2013-2015. (35,000 TL).

6) Principal Investigator; Synthesis and Characterization of Monodisperse Alloy and Core-Shell Bimetallic Palladium Nanoparticles and Their Catalysis for the Selective Reduction of Nitroarenes via Transfer Hydrogenation, TÜBITAK Career Project, 2013-2015. (205,000 TL).

5) Principal Investigator; The Sytnhesis of Magnetically Recoverable Graphene/Graphene oxide Base Nanocomposites and Their Performance in the Organic Dye Removal From Aqueous Solution, Atatürk University Research Projects Council, 2016-2018 (30,000 TL).

4) Consultant; Carbon-Based Tandem Broadband Photocatalytic Nano-Architectures, TÜBİTAK 1001 Project, 2017-2019 (230,000 TL)

3) Researcher; Determination of zinc, one of the vital bioelements, with spectrofluorimetric method by using the $Fe_3O_4/SiO_2–NH_2$ nanocomposite functionalized with Znpyr-1 ligand in artificial saliva, TÜBITAK 3001 Project, 2015-2017, (60,000 TL)

2) PhD Fellow, Water Soluble Polymer-Stabilized Nickel(0) and Cobalt(0) Nanoclusters: Synthesis, Characterization and Catalytic Use, TÜBİTAK 1001 Project, 2008-2010 (98,000 TL)

1) PhD Research Fellow; TÜBİTAK-107M447- INTEN-C projesi, 2010.

10.Invited Talks:

1) Hydrogen Production from Chemical Hydrogen Storage Materials Using Transition Metal Nanocatalysts, ***Department of Chemistry, Brown University***, 21 November 2012.

2) Drinking Water Disinfection Technologies***, 1st Adana Water Summit,*** 22 March 2015 (World Water Day), Adana, Turkey.

3) Composition-Controlled Catalysis of MPd (M: Fe, Co, Ni, Cu) Alloy Nanoparticles, ***V. National Inorganic Chemistry Congress***, 22-25 April 2015, Mersin, Turkey.

4) Transition Metal Nanoparticles as Catalysts, ***27. National Chemistry Conference,*** 23-28 August 2015, Çanakkale, Turkey.

5) Catalysis with Transition Metal Nanoparticles, Department of Chemistry, Gebze Technical University, 21 January 2016, Gebze, Turkey

6) Are we drinking a water or poison? The Chemistry and Importance of Drinking Water Disinfection**,** ***2nd Adana Water Summit,*** 22 March 2016 (World Water Day), Adana, Turkey.
7) Nanocatalysis: From Theory to Applications, Nanotechnology Research and Application Center, Sabancı University, 06 May 2016, İstanbul, Turkey
8) Selective reduction of nitroarenes to anilines via facile transfer hydrogenation reactions catalyzed by reduced graphene oxide supported bimetallic MPd (M: Fe, Co, Ni,) alloy nanoparticles**,** Peking University, 06 July 2016, Bejing, China.
9) Nanocatalysts In A Wide-Range Application Spectrum: From Organic Synthesis To Energy Storage**,** 28th National Chemistry Congress, 15-21 August 2016, Mersin, TURKEY.
10) Reduced Graphene Oxide as a Versitale Support Material for the Nanocatalysts, 3rd Emerging 2D Materials&Graphene Conference, 20-21 October 2016, İstanbul, Turkey.
11) Nanocatalysis: From Theory to Applications, Department of Chemistry, Bilkent University, 08 November 2016, Ankara, Turkey
12) Catalysis by Transition Metal Nanoparticles, Department of Chemistry, Çukurova University, 25 January 2017, Adana, Turkey.
13) Rational Design of Transition Metal Nanoparticles for a Wide-Range of Catalytic Applications, Department of Chemistry, Faculty of Science&Engineering, Koç University, 23 February 2017, İstanbul, Turkey.
14) Bimetallic Alloy Nanoparticles Supported on Reduced Graphene Oxide as Cathode Catalysts for the Lithium-Oxygen Battery, 14th International Conference on Energy Storage (EnerStock2018), 25-28 April 2018, Çukurova University, Adana, Turkey.
15) Rational Design of Transition Metal Nanoparticles for a Wide-Range of Catalytic Applications, ICANAS 2018, 9-12 May 2018, Antalya, Turkey.
16) Nanocatalysts for Energy Storage and Conversion Systems as the Solution of Global Energy Problems, Bursa Uludağ University, 10/04/2019, Bursa, Turkey.
17) Nanocatalysts as the Key of the Sustainable Organic Synthesis and Energy Systems, Zonguldak Bülent Ecevit University, 12/04/2019, Zonguldak, Turkey.
18) Nanocatalysts for Energy Storage and Conversion Systems, Marmara University, 22 October 2019, İstanbul, Turkey
19) Global Energy Problems and the role of nanocatalysts for the development of efficient energy storage and conversion systems, Aydın Adnan Menderes University, 30 October 2019, Aydın, Turkey.
20) Nanocatalysis: A key for the development of sustainable chemical methodologies and efficient energy systems, 3rd EastWest Chemistry Conference, 12-15 Nov 2019 University of Palermo, Palermo, Italy.
21) Rational Design of Transition Metal Nanoparticles For a Wide-Range of Catalytic Applications, the 18th Asian Chemical Congress (18th ACC), 7-12 December 2019, Taipei, Taiwan.
22) Hydrogen energy and fuel cells: from the current status and challenges to a vision on the future, 2020 Silk Road International Conference on the Cooperation and Integration of Industry, Education, Research and Application, 10-11 December 2020, China (online).
23) Nanocatalysts for Energy Storage and Conversion Systems, Tekirdağ Namık Kemal University, Faculty of Science, Department of Chemistry, 04/06/2021, Tekirdağ (Online).
24) Photocatalysis with Semiconductor 2D Materials and Their Heterojunctions, EastWest Chemistry Conference, October 7-9, 2021, Kiev, Ukraine, *online*.

25) Developing Visible Technologies Beneficial to Humanity with Invisible Nanomaterials, NanoFest 2021, Konya Science Center, Konya, Türkiye.
26) Photocatalysis with the Nanocomposites Comprising Non-metallic 2D Semiconductors and Metal Nanoparticles, World Congress on Applied Nanotechnology (W-CAN), November 24-26, 2021, Erzurum, Turkey, *online*.
27) Photocatalytic Applications with Two-Dimensional Semiconductor Materials and Their Heterojunctions under Visible Light, December 24, 2021, Dicle Üniversitesi Kimya Bölümü, Diyarbakır, *online*.
28) The Rational Design of Heterojunction Photocatalysts for Hydrogen Production under Visible Light, 6th International Hydrogen Technologies Congress, January 23-26, 2022, Çanakkale Onsekiz Mart University, Çanakkale, Türkiye, *hybrid*.
29) Solar-driven Hydrogen Production via Rationally Designed Heterostructured Photocatalysts, mESC-IS 2022, 6th Int. Symposium on Materials for Energy Storage and Conversion, July 5-8, 2022, Bol, Island of Brač, Croatia.
30) Developing Visible Technologies Beneficial to Humanity with Invisible Nanomaterials, National Chemistry Summit, October 08, 2022, Boğaziçi University, Garanti Cultural Center.
31) The Rational Design and Fabrication of Heterojunction Photocatalysts for Green Energy and Chemistry, ICANAS 2022, October 12, 2022, Ağrı İbrahim Çeçen University, online.
32) Sustainable Chemical Energy Transformations with Heterojunction Photocatalyts, New Frontiers of Natural Sciences (NFNS): The 1st Selçuk Meeting, Selçuk University, Konya, Türkiye.
33) Development of Advanced Technologies Beneficial to Humanity with Nanomaterials, Science Heros Society, November 23, 2022, Online.
34) Rational Design of Heterostructured Photocatalysts for Sustainable Chemical Conversions, Pure and Applied Chemistry: International Conference, January 20-21, 2023, Chiang Rai, Thailand.

Publications

12.1. Patents

1) Önder Metin, Melek Sermin Özer, Zafer Eroğlu, Bismuthene as a Versatile Photocatalyst Operating Under Variable Conditions For The Photoredox C–H Bond Functionalization, Patent application, Application No: PCT/TR2022/050454.

12.2. Book and book chapters

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Total Citations (Google Scholar)= 8220, h-index= 47, i-index= 96 (as of June 15, 2023).
(1 paper ≥ 1000 citations, 2 papers ≥ 500 citations, 3 papers ≥ 300 citations, 9 papers ≥ 200 citations, 22 papers ≥ 100 citations, 44 papers ≥ 50 citations)
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