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Personal Information

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International Researcher IDs
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Education Information

Doctorate, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Kimya (Dr), Turkey 2004 - 2009
Postgraduate, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Kimya (Yl) (Tezli), Turkey 2002 - 2004
Undergraduate, Pamukkale University, Faculty Of Arts And Scıences, Department Of Chemıstry, Turkey 1998 - 2002

Dissertations

Doctorate, Synthesis and Characterization of Some Metal Carbonyl Complexes Containing Nitrogen and Sulphur Donor Atoms, Dokuz Eylul University, Fen Bilimleri Enstitüsü, 2009
Postgraduate, Boron Adsorption, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Kimya (Yl) (Tezli), 2004

Research Areas

Chemistry, Inorganic Chemistry, Catalysis, nanoclusters

Academic Titles / Tasks

Professor, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2023 - Continues
Associate Professor, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2014 - 2023
Research Assistant PhD, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2009 - 2014
Research Assistant, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2004 - 2009

Academic and Administrative Experience

Adaptation/Exemption Committee Member, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2021 - Continues
Ders Bologna Koordinatörü, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2021 - Continues
Deputy Head of Department, Dokuz Eylul University, Fen Fakültesi, Kimya Bölümü, 2016 - 2018

Courses

Postgraduate

M.Sc. Thesis, Postgraduate, 2021 - 2022

M.Sc. Research, Postgraduate, 2021 - 2022

Undergraduate

Hidrojen Ekonomisi, Undergraduate, 2023 - 2024

Graduation project, Undergraduate, 2022 - 2023

Kimya, Undergraduate, 2021 - 2022

Inorganic Chemistry Laboratory I, Undergraduate, 2022 - 2023

Kimya, Undergraduate, 2022 - 2023

Inorganic Chemistry Laboratory II, Undergraduate, 2021 - 2022

Inorganic Chemistry I, Undergraduate, 2022 - 2023

Green Chemistry and Applications, Undergraduate, 2021 - 2022

Inorganic Chemistry II, Undergraduate, 2020 - 2021

Supervised Theses

Karahan Gülbay S., Hydrogen generation from the catalytic decomposition of formic acid, Postgraduate, M.KAYMAZ(Student), 2022

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Carbon supported Pd based catalysts for the hydrolytic dehydrogeneration of morpholine borane**
Karahan Gülbay S., Kaymaz M., Gülbağça F., Şen F.
Chemosphere, pp.1-8, 2022 (SCI-Expanded)

II. **Improving hydrogen generation from dehydrogenation of dimethylamine borane using polyvinylpyrrolidone stabilized platinum- rhodium nanoclusters as highly efficient and reusable catalysts: Development of ANN model**
Tiri R. N. E., Aygün A., Karahan Gülbay S., Şen F., Cheng C. K., Jafarzadeh H., Mehrizi A. A., Vasseghian Y.
CHEMICAL ENGINEERING RESEARCH AND DESIGN, vol.182, pp.305-311, 2022 (SCI-Expanded)

III. **A Comparison of the Effects of Sodium Borohydride-Based Hydrogen Storage System and Compressed Hydrogen Storage Tank on the Fuel Cell Vehicle Performance**
Alpaydin C. Y., ÇOLPAN C. Ö., KARAOĞLAN M. U., KARAHAN GÜLBAY S.
JOURNAL OF ENERGY RESOURCES TECHNOLOGY-TRANSACTIONS OF THE ASME, vol.143, no.12, 2021 (SCI-Expanded)

IV. **A review on the catalysts used for hydrogen production from ammonia borane**
Alpaydin C. Y., KARAHAN GÜLBAY S., ÇOLPAN C. Ö.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.45, no.5, pp.3414-3434, 2020 (SCI-Expanded)

V. **Bimetallic palladium-cobalt nanomaterials as highly efficient catalysts for dehydrocoupling of dimethylamine borane**
Sen B., Aygun A., Savk A., Calimli M. H., KARAHAN GÜLBAY S., ŞEN F.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.45, no.5, pp.3569-3576, 2020 (SCI-Expanded)

VI. **Highly monodisperse Pd-Ni nanoparticles supported on rGO as a rapid, sensitive, reusable and selective enzyme-free glucose sensor**
Savk A., Cellat K., Arikan K., Tezcan F., Karahan Gülbay S., Kızıldağ S., Işgın E., Şen F.
SCIENTIFIC REPORTS, vol.9, 2019 (SCI-Expanded)

VII. **Binary Palladium-Nickel/Vulcan carbon-based nanoparticles as highly efficient catalyst for hydrogen evolution reaction at room temperature**

Sen B., Aygun A., Savk A., Gulbagca F., Gulbay S., Calimli M. H., ŞEN F.
JOURNAL OF THE TAIWAN INSTITUTE OF CHEMICAL ENGINEERS, vol.101, pp.92-98, 2019 (SCI-Expanded)

VIII. **Trimetallic PdRuNi nanocomposites decorated on graphene oxide: A superior catalyst for the hydrogen evolution reaction**
Sen B., Demirkan B., Savk A., Gulbay S., ŞEN F.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.43, no.38, pp.17984-17992, 2018 (SCI-Expanded)

IX. **Hydrogen liberation from the hydrolytic dehydrogenation of hydrazine borane in acidic media**
Sen B., Savk A., Kuyuldar E., KARAHAN GÜLBAY S., ŞEN F.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.43, no.38, pp.17978-17983, 2018 (SCI-Expanded)

X. **Poly(4-styrenesulfonic acid-co-maleic acid) stabilized cobalt(0) nanoparticles: A cost-effective and magnetically recoverable catalyst in hydrogen generation from the hydrolysis of hydrazine borane**
Karahan S., ÖZKAR S.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.40, no.5, pp.2255-2265, 2015 (SCI-Expanded)

XI. **Poly(4-styrenesulfonic acid-co-maleic acid) stabilized nickel(0) nanoparticles: Highly active and cost effective catalyst in hydrogen generation from the hydrolysis of hydrazine borane**
Sencanli S., Karahan S., ÖZKAR S.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.38, no.34, pp.14693-14703, 2013 (SCI-Expanded)

XII. **Hydrogen generation from the hydrolysis of hydrazine-borane catalyzed by rhodium(0) nanoparticles supported on hydroxyapatite**
Celik D., Karahan S., Zahmakiran M., ÖZKAR S.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.37, no.6, pp.5143-5151, 2012 (SCI-Expanded)

XIII. **A facile one-step synthesis of polymer supported rhodium nanoparticles in organic medium and their catalytic performance in the dehydrogenation of ammonia-borane**
Karahan S., Zahmakiran M., ÖZKAR S.
CHEMICAL COMMUNICATIONS, vol.48, no.8, pp.1180-1182, 2012 (SCI-Expanded)

XIV. **Catalytic methanolysis of hydrazine borane: a new and efficient hydrogen generation system under mild conditions**
Karahan S., Zahmakiran M., ÖZKAR S.
DALTON TRANSACTIONS, vol.41, no.16, pp.4912-4918, 2012 (SCI-Expanded)

XV. **Catalytic hydrolysis of hydrazine borane for chemical hydrogen storage: Highly efficient and fast hydrogen generation system at room temperature**
Karahan S., Zahmakiran M., ÖZKAR S.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.36, no.8, pp.4958-4966, 2011 (SCI-Expanded)

XVI. **Photochemical Reactions of M(CO)5 THF (M = Cr, Mo, W) with Salen Type (-ONNO-) Schiff Bases**
SUBAŞI E., KÖSE YAMAN P., KARAHAN GÜLBAY S., Ergun Y.
SYNTHESIS AND REACTIVITY IN INORGANIC METAL-ORGANIC AND NANO-METAL CHEMISTRY, vol.39, no.3, pp.139-143, 2009 (SCI-Expanded)

XVII. **Photochemical reactions of M(CO)(5)THF (M = Cr, Mo, W) with thio Schiff bases**
KARAHAN GÜLBAY S., KÖSE YAMAN P., SUBAŞI E., Alp H., TEMEL H.
TRANSITION METAL CHEMISTRY, vol.33, no.7, pp.849-854, 2008 (SCI-Expanded)

XVIII. **1,4-Bis[2-(1,3-benzothiazol-2-yl)-phenoxy]butane**
BÜYÜKGÜNGÖR O., Oezek A., KARAHAN GÜLBAY S., SUBAŞI E.
ACTA CRYSTALLOGRAPHICA SECTION E-CRYSTALLOGRAPHIC COMMUNICATIONS, vol.64, 2008 (SCI-Expanded)

XIX. **Photochemical reactions of [M(CO)(5)THF] (M : Cr, Mo and W) with tetradentate Schiff-bases**
KARAHAN GÜLBAY S., Koese P., SUBAŞI E., TEMEL H.
SYNTHESIS AND REACTIVITY IN INORGANIC METAL-ORGANIC AND NANO-METAL CHEMISTRY, vol.38, no.5, pp.422-427, 2008 (SCI-Expanded)

XX. **Photochemical reactions of cis-[(eta(4)-NBD)M(CO)(4)] (NBD = norbornadiene; M = Cr, Mo) olefin complex with ligand, containing S and N donor atoms**
Subasi E., Karahan S., Ercag A.
RUSSIAN JOURNAL OF COORDINATION CHEMISTRY, vol.33, no.12, pp.886-890, 2007 (SCI-Expanded)

XXI. **Removal of boron from aqueous solution by clays and modified clays**
Karahan S., YURDAKOÇ M., SEKİ Y., YURDAKOÇ M. K.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.293, no.1, pp.36-42, 2006 (SCI-Expanded)

XXII. **Kinetic and thermodynamic studies of boron removal by Siral 5, Siral 40, and Siral 80**
YURDAKOÇ M., SEKİ Y., Karahan S., YURDAKOÇ M. K.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.286, no.2, pp.440-446, 2005 (SCI-Expanded)

Books

I. **Poly(N-vinyl-2-pyrrolidone) Stabilized Nanoclusters as Highly Efficient and Reusable Catalyst for the Dehydrogenation of Dimethyl Ammonia- Borane**
Şen B., Paralı Ö., Akocak S., Karahan Gülbay S., Şen F.
in: Smart Polymers and Composites, Abu Nasar, Editor, Materials Research Forum LLC, Maryland, pp.178-195, 2018

Papers Published in Refereed Scientific Meetings

I. **Vulcan XC-72 Karbon Destekli Paladyum Nanopartiküllerinin Eldesi ve Formik Asidin Katalitik Bozunma Tepkimesinde Aktivitelerinin İncelenmesi**
Kaymaz M., Karahan Gülbay S.
4th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2021, 24 - 26 November 2021, pp.334

II. **Hydrogen production through dehydrogenation of morpholine borane in the presence of PSSA stabilized Pd-based catalysts**
Yüksel Alpaydın C., Kaymaz M., Karahan Gülbay S., Çolpan C. Ö.
5th International Hydrogen Technologies Congress - Online, 26 - 28 May 2021, pp.191-193

III. **Individual and Simultaneous Voltammetric Determination of Ascorbic Acid,Dopamine and Uric Acid Using a New, Highly Selective and Sensitive Reduced Graphene Oxide/Polypyrrole-Platinum Modified Sensor**
ŞAHİN IŞGIN E., KIZILDAĞ S., KARAHAN GÜLBAY S., yılmaz m., ŞEN F.
INTERNATIONAL CHEMISTRY BIOLOGY CONFERENCE'19, SHARM EL SHEIKH, Egypt, 1 - 05 August 2019, pp.60

IV. **Copper/nickel Nanoparticle Decorated Carbon Nanotubes for Non-Enzymatic Glucose Biosensor**
ŞAHİN IŞGIN E., KIZILDAĞ S., KARAHAN GÜLBAY S., arıkan k., ŞEN F.
INTERNATIONAL CHEMISTRY BIOLOGY CONFERENCE'19, SHARM EL SHEIKH, Egypt, 1 - 05 August 2019, pp.42

V. **Mathematical modeling of a small scale catalytic reactor for hydrogen production from boron compounds**
Alpaydin C. Y., ÇOLPAN C. Ö., KARAHAN GÜLBAY S.
4th International Conference on Smart and Sustainable Technologies (SpliTech), Croatia, 18 - 21 June 2019, pp.345-348

VI. **Monodisperse Palladium-Cobalt Alloy Nanoparticles Assembled On Graphene Oxide As Highly Effective Catalyst For The Dimethylamine Borane (DMAB) Dehydrocoupling**
Şen B., Aygün A., Şavk A., Karahan Gülbay S., Şen F.
7th Global Conference on Global Warming, İzmir, Turkey, 24 - 28 June 2018, pp.216

VII. **Carbon Based Bimetallic Palladium-Nickel Alloy Nanohybrids As Highly Effective Catalyst For The Dehydrocoupling Of Dimethylamine Borane (DMAB)**
Şen B., Aygün A., Şavk A., Karahan Gülbay S., Şen F.
7th Global Conference on Global Warming, İzmir, Turkey, 24 - 28 June 2018, pp.216

VIII. **TiO2 Supported Bimetallic PdAg Nanoparticles as Highly Active, Selective, and Reusable Catalayst for The Photocatalytic Decomposition of Formic Acid**

Karakaş K., KARAHAN GÜLBAY S., ZAHMAKIRAN M., TUNÇ M.
International Congress On Chemistry And Materials Science (ANCON 2017), 5 - 07 October 2017

IX. **Poly 4 styrenesulfonic acid co maleic acid stabilized PdAg nanoparticles for the dehydrogenation of formic acid at room temperature**
Karahan S., Caner N.
1st International Mediterranean Science and Engineering Congress, Adana, Turkey, 26 - 28 October 2016, pp.3093-3094

X. **Highly active and cost effective nickel(0) nanoparticles: A catalyst in the hydrolysis of hydrazine borane**
Şencanlı S., Karahan Gülbay S., Özkar S.
9th Nanoscience And Nanotechnology Conference, Erzurum, Turkey, 24 June 2013 - 28 June 2018, pp.161

XI. **In-situ generation of magnetically recoverable cobalt(0) nanoclusters in the hydrolysis of hydrazine borane**
Karahan Gülbay S., Özkar S.
9th Nanoscience And Nanotechnology Conference, Erzurum, Turkey, 24 - 28 June 2013, pp.162

XII. **Hidrazin Boranın Hidroklorik Asit ile Hidrolizi ve Hidrojen Eldesi**
Karahan Gülbay S., Özkar S.
26. Ulusal Kimya Kongresi, Muğla, Turkey, 1 - 06 October 2012, pp.94

XIII. **Hidrazin Boranın Katalitik Metanolizi ile Hidrojen Eldesi**
Karahan Gülbay S., Zahmakıran M., Özkar S.
26. Ulusal Kimya Kongresi, Muğla, Turkey, 1 - 06 October 2012, pp.93

XIV. **Hidroksiapatit Destekli Rodyum(0) Nanokümeleri: Sentezi, Tanımlanması ve Hidrazin Boranın Hidrolizindeki Katalitik Kullanımı**
Çelik D., Karahan Gülbay S., Zahmakıran M., Özkar S.
III. Ulusal Anorganik Kimya Kongresi, Çanakkale, Turkey, 19 - 22 May 2011, pp.92

XV. **BNxHy Birimlerini İçeren Polimer ile Desteklenmiş Rodyum(0) Nanokümeleri: Hazırlanması, Tanımlanması ve Amonyak Boranın Hidrolizinde Katalitik Etkinliği**
Karahan Gülbay S., Zahmakıran M., Özkar S.
III. Ulusal Anorganik Kimya Kongresi, Çanakkale, Turkey, 19 - 22 May 2011, pp.11

XVI. **Catalytic Hydrolysis of Hydrazine Borane in Air at Room Temperature for Chemical Hydrogen Storage**
Karahan Gülbay S., Zahmakıran M., Özkar S.
6th EFCATS Summer School, İzmir, Turkey, 13 - 19 September 2010, pp.86

XVII. **Syntheses of Stable Heterocyclic (Schiff Base) Divalent Tin Complexes**
Çetin S., Karahan Gülbay S., Subaşı E., Temel H.
II. Ulusal Anorganik Kimya Kongresi, Elazığ, Turkey, 16 - 19 May 2009, pp.248

XVIII. **Spectroscopic Study of Aryl Substituted Porphyrin Metal Complexes**
Karahan Gülbay S., Seyhan Bozkurt S., Merdivan M.
6th Aegean Analytical Chemistry Days, International Conference, Denizli, Turkey, 9 - 12 October 2008, pp.255

XIX. **Photochemical Generations Of Bimetallic Carbonyl Complexes**
Karahan Gülbay S., Köse P., Subaşı E., Temel H.
Sixth International Conference Of The Chemical Societies Of The South-Eastern Europen Countries, Sofija, Bulgaria, 10 - 14 September 2008, pp.168

XX. **Photochemical Rearrangement Of Tetradentate Schiff Bases And Photogeneration Of VIB Group Metal Carbonyl Complexes**
Karahan S., Köse P., Subaşı E., Alp H., Temel H.
Sixth International Conference Of The Chemical Societies Of The South-Eastern Europen Countries, Sofija, Bulgaria, 10 - 14 September 2008, pp.167

XXI. **Photochemical reactions of M(CO)6 (M=Cr,Mo,W) with salen type Schiff base ligands**
Köse P., Karahan Gülbay S., Subaşı E., Ergün M. Y., Temel H.
Sixth International Conference Of The Chemical Societies Of The South-Eastern Europen Countries, Sofija, Bulgaria,

10 - 14 September 2008, pp.176

XXII. **Mo(CO)5THF Kompleksinin ONNO Ve SNNS Donorlu Ligandlar İle Termal Ve Fotokimyasal Tepkimelerinin İncelenmesi**
Karahan Gülbay S., Köse P., Subaşı E., Temel H.
21. Ulusal Kimya Kongresi, Malatya, Turkey, 23 - 27 August 2007, pp.61

XXIII. **Salen Tipi Schiff Bazı İle M(CO)6 (M= Cr, Mo, W) ve Mo(CO)4(pip)2 Komplekslerinin Tepkimeleri**
Köse P., Karahan Gülbay S., Subaşı E., Temel H.
21. Ulusal Kimya Kongresi, Malatya, Turkey, 23 - 27 August 2007, pp.74

XXIV. **[N,N'-bis(salisiliden)-1,2-bis-(o-aminofenoksi)etan], (H2L) Ligandı ile [W(CO)4(H2L)] Kompleksinin Spektrofotometrik İncelenmesi ve (H2L) Yapısı ile Emisyon Esaslı Nanomolar Düzeyde Çinko Tayini**
Karahan Gülbay S., Subaşı E., Oğuzlar S., Ertekin K., Temel H.
XX. Ulusal Kimya Kongresi, Kayseri, Turkey, 4 - 08 September 2006, pp.21

XXV. **(h4-nbd)M(CO)4 [M: Cr, Mo, W] Komplekslerinin Çeşitli Azot ve Kükürt Donorlü Ligandlar İle Sübstitüsyon Tepkimelerinin İncelenmesi**
Subaşı E., Karahan Gülbay S., Erçağ A., Şentürk O. S., Uğur F.
XIX. Ulusal Kimya Kongresi, Aydın, Turkey, 30 September - 04 October 2005, pp.294

XXVI. **Siral 5, Siral 40 ve Siral 80 Kullanılarak Sulu Çözeltiden Bor Uzaklaştırılması**
Seki Y., Karahan Gülbay S., Yurdakoç M., Yurdakoç M. K.
XIX. Ulusal Kimya Kongresi, Aydın, Turkey, 30 September - 04 October 2005, pp.209

XXVII. **Bor'un Sulu Çözeltiden Adsorpsiyonu**
Karahan Gülbay S., Yurdakoç M., Seki Y., Yurdakoç M. K.
XVIII. Ulusal Kimya Kongresi, Kars, Turkey, 5 - 09 July 2004, pp.336

Supported Projects

KARAHAN GÜLBAY S., Project Supported by Higher Education Institutions, Formik Asidin Katalitik Bozunması Yoluyla Hidrojen Eldesi, 2021 - 2022

KARAHAN GÜLBAY S., Project Supported by Higher Education Institutions, Polimer destekli PtRh bimetalik nanokatalizörlerin hazırlanması, karakterizasyonu ve yenilenebilir enerji kaynaklarından biri olan hidrojenin üretiminde kullanımı, 2018 - 2019

KIZILDAĞ S., IŞGIN E., KARAHAN GÜLBAY S., Project Supported by Higher Education Institutions, İnorganik Nano Sensörlerin Geliştirilmesi ve Uygulanabilirliklerinin Araştırılması, 2018 - 2019

KIZILDAĞ S., IŞGIN E., KARAHAN GÜLBAY S., Project Supported by Higher Education Institutions, Elektrokimyasal ve Nanosensör Özellik Gösteren İletken Polimerin Sentezi ve Uygulanabilirliklerinin İncelenmesi, 2018 - 2019

Karahan Gülbay S., Project Supported by Higher Education Institutions, Yeni nesil karbon destekli bimetalik PdNi nanokatalizörlerin sentezi ve karakterizasyonu, 2017 - 2018

Merdivan M., SEYHAN BOZKURT S., KARAHAN GÜLBAY S., TUBITAK Project, Metallerin İnce Tabaka Kromatografisi İle Nicel Tayininde Porfirinlerin Kullanılabilirliği, 2007 - 2009

Karahan Gülbay S., Subaşı E., Project Supported by Higher Education Institutions, Azot Kükürt ve Fosfor Donor Ligandlarını İçeren Bazı Geçiş Metal Karbonil Komplekslerinin Sentezi ve Karakterizasyonu, 2005 - 2008

Karahan Gülbay S., Yurdakoç M., SEKİ Y., Project Supported by Higher Education Institutions, Borun Sulu Çözeltiden Geri Kazanımına Yönelik Kil Tabanlı Adsorplayıcı Geliştirme, 2003 - 2004

Metrics

Publication: 50
Citation (WoS): 916
Citation (Scopus): 753
H-Index (WoS): 13

H-Index (Scopus): 10

Scholarships

Yurtiçi Doktora Sonrası Araştırma Bursu, TUBITAK, 2010 - 2011