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Education Information

Associate Degree, Anadolu University, Open Education Faculty, Department Of Hotel, Restaurant And Catering Services, Turkey 2020 - Continues

Post Doctorate, Argonne National Laboratory, Chemical Sciences and Engineering Division, Catalysis Science Program, United States Of America 2018 - 2019

Doctorate, The Ohio State University, Faculty of Engineering, Chemical and Biomolecular Engineering, United States Of America 2013 - 2018

Postgraduate, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, Turkey 2010 - 2012

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, Turkey 2005 - 2010

Dissertations

Doctorate, Swellable Organically Modified Silica as a Novel Catalyst Scaffold for Catalytic Treatment of Water Contaminated with Trichloroethylene, The Ohio State University, 2018

Postgraduate, Bi-functional nanostructured novel catalysts for dimethyl ether synthesis, Middle East Technical University, 2012

Research Areas

Waste Water Collection and Treatment, Gas Control, Water Pollution and Control, Soil and Groundwater Pollution and Control, Polymer Technology, Environmental Chemistry and Technology, Inorganic Technologies, Fuels and Combustion Technology, Chemical Reaction Engineering, Catalysis and Catalytic Processes, Plating, Nanomaterials

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, 2020 - Continues

Research Assistant, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, 2010 - 2012

Academic and Administrative Experience

Courses

Thermodynamics, Undergraduate, 2019 - 2020

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

- I. **Grafted nickel-promoter catalysts for dry reforming of methane identified through high-throughput experimentation**
Ferrandon M. S. , Byron C., Celik G., Zhang Y., Ni C., Sloppy J., McCormick R. A. , Booksh K., Teplyakov A., Delferro M. APPLIED CATALYSIS A-GENERAL, vol.629, 2022 (Journal Indexed in SCI)
- II. **Synthetic Lubricants Derived from Plastic Waste and their Tribological Performance**
Hackler R. A. , Vyavhare K., Kennedy R. M. , ÇELİK G., Kanbur U., Griffin P. J. , Sadow A. D. , Zang G., Elgowainy A., Sun P., et al.
ChemSusChem, vol.14, no.19, pp.4181-4189, 2021 (Journal Indexed in SCI)
- III. **On the dual role of the reactant during aqueous phase hydrodechlorination of trichloroethylene (HDC of TCE) using Pd supported on swellable organically modified silica (SOMS)**
Ailawar S., Hunoor A., Rudzinski B., Celik G., Burel L., Millet J., Miller J. T. , Edmiston P. L. , Ozkan U. S. APPLIED CATALYSIS B-ENVIRONMENTAL, vol.291, 2021 (Journal Indexed in SCI)
- IV. **Effect of High Temperature on Swellable Organically Modified Silica (SOMS) and Its Application for Preferential CO Oxidation in H₂ Rich Environment**
Basu D., Ailawar S., Celik G., Edmiston P., Ozkan U. S.
CHEMCATCHEM, vol.12, no.14, pp.3753-3768, 2020 (Journal Indexed in SCI)
- V. **Activation of Low-Valent, Multiply M-M Bonded Group VI Dimers toward Catalytic Olefin Metathesis via Surface Organometallic Chemistry**
Chapovetsky A., Langeslay R. R. , Celik G., Perras F. A. , Pruski M., Ferrandon M. S. , Wegener E. C. , Kim H., Dogan F., Wen J., et al.
ORGANOMETALLICS, vol.39, no.7, pp.1035-1045, 2020 (Journal Indexed in SCI)
- VI. **Role of Boron in Enhancing the Catalytic Performance of Supported Platinum Catalysts for the Nonoxidative Dehydrogenation of n-Butane**
Byron C., Bai S., Celik G., Ferrandon M. S. , Liu C., Ni C., Mehdad A., Delferro M., Lobo R. F. , Teplyakov A. V. ACS Catalysis, vol.10, no.2, pp.1500-1510, 2020 (Journal Indexed in SCI)
- VII. **Mechanistic Aspects of a Surface Organovanadium(III) Catalyst for Hydrocarbon Hydrogenation and Dehydrogenation**
Kaphan D. M. , Ferrandon M. S. , Langeslay R. R. , Celik G., Wegener E. C. , Liu C., Niklas J., Poluektov O. G. , Delferro M.
ACS Catalysis, vol.9, no.12, pp.11055-11066, 2019 (Journal Indexed in SCI)
- VIII. **Upcycling Single-Use Polyethylene into High-Quality Liquid Products**
Celik G., Kennedy R. M. , Hackler R. A. , Ferrandon M., Tennakoon A., Patnaik S., Lapointe A. M. , Ammal S. C. , Heyden A., Perras F. A. , et al.
ACS Central Science, vol.5, no.11, pp.1795-1803, 2019 (Journal Indexed in SCI)
- IX. **Electrophilic Organoiridium(III) Pincer Complexes on Sulfated Zirconia for Hydrocarbon Activation and Functionalization**
Syed Z. H. , Kaphan D. M. , Perras F. A. , Pruski M., Ferrandon M. S. , Wegener E. C. , Celik G., Wen J., Liu C., Dogan F., et al.
Journal of the American Chemical Society, vol.141, no.15, pp.6325-6337, 2019 (Journal Indexed in SCI)
- X. **Aqueous-Phase Hydrodechlorination of Trichloroethylene over Pd-Based Swellable Organically Modified Silica: Catalyst Deactivation Due to Sulfur Species**

Celik G., Ailawar S. A. , Gunduz S., Miller J. T. , Edmiston P. L. , Ozkan U. S.

Industrial and Engineering Chemistry Research, vol.58, no.10, pp.4054-4064, 2019 (Journal Indexed in SCI)

- XI. **Formation of carbonaceous deposits on Pd-based hydrodechlorination catalysts: Vibrational spectroscopy investigations over Pd/Al₂O₃ and Pd/SOMS**
Celik G., Ailawar S. A. , Gunduz S., Edmiston P. L. , Ozkan U. S.
Catalysis Today, vol.323, pp.129-140, 2019 (Journal Indexed in SCI)
- XII. **Effect of alumina incorporation on the sulfur tolerance of the dual-catalyst aftertreatment system for reduction of nitrogen oxides under lean conditions**
Sinha Majumdar S., Alexander A., Gawade P., Celik G., Ozkan U. S.
Catalysis Today, vol.320, pp.204-213, 2019 (Journal Indexed in SCI)
- XIII. **Aqueous-phase hydrodechlorination of trichloroethylene over Pd-based swellable organically-modified silica (SOMS): Catalyst deactivation due to chloride anions**
Celik G., Ailawar S. A. , Gunduz S., Miller J. T. , Edmiston P. L. , Ozkan U. S.
Applied Catalysis B: Environmental, vol.239, pp.654-664, 2018 (Journal Indexed in SCI)
- XIV. **Atomically Precise Strategy to a PtZn Alloy Nanocluster Catalyst for the Deep Dehydrogenation of n - Butane to 1,3-Butadiene**
Camacho-Bunquin J., Ferrandon M. S. , Sohn H., Kropf A. J. , Yang C., Wen J., Hackler R. A. , Liu C., Celik G., Marshall C. L. , et al.
ACS Catalysis, vol.8, no.11, pp.10058-10063, 2018 (Journal Indexed in SCI)
- XV. **Swellable Organically Modified Silica (SOMS) as a Catalyst Scaffold for Catalytic Treatment of Water Contaminated with Trichloroethylene**
Celik G., Ailawar S. A. , Sohn H., Tang Y., Tao F. F. , Miller J. T. , Edmiston P. L. , Ozkan U. S.
ACS Catalysis, vol.8, no.8, pp.6796-6809, 2018 (Journal Indexed in SCI)
- XVI. **Enhancement in Oxygen Reduction Reaction Activity of Nitrogen-Doped Carbon Nanostructures in Acidic Media through Chloride-Ion Exposure**
Jain D., Mamtani K., Gustin V., Gunduz S., Celik G., Waluyo I., Hunt A., Co A. C. , Ozkan U. S.
ChemElectroChem, vol.5, no.14, pp.1966-1975, 2018 (Journal Indexed in SCI)
- XVII. **Hydrodechlorination of trichloroethylene over Pd supported on swellable organically-modified silica (SOMS)**
Sohn H., Celik G., Gunduz S., Dean S. L. , Painting E., Edmiston P. L. , Ozkan U. S.
Applied Catalysis B: Environmental, vol.203, pp.641-653, 2017 (Journal Indexed in SCI)
- XVIII. **In-situ incorporation of binder during sol-gel preparation of Pd-based sulfated zirconia for reduction of nitrogen oxides under lean-burn conditions: Effect on activity and wash-coating characteristics**
Sinha Majumdar S., Celik G., Alexander A., Gawade P., Ozkan U. S.
Applied Catalysis B: Environmental, vol.202, pp.134-146, 2017 (Journal Indexed in SCI)
- XIX. **Oxygen Mobility in Pre-Reduced Nano- and Macro-Ceria with Co Loading: An AP-XPS, In-Situ DRIFTS and TPR Study**
Sohn H., Celik G., Gunduz S., Dogu D., Zhang S., Shan J., Tao F. F. , Ozkan U. S.
Catalysis Letters, vol.147, no.11, pp.2863-2876, 2017 (Journal Indexed in SCI)
- XX. **Effect of high-temperature on the swellable organically-modified silica (SOMS) and its application to gas-phase hydrodechlorination of trichloroethylene**
Sohn H., Celik G., Gunduz S., Majumdar S. S. , Dean S. L. , Edmiston P. L. , Ozkan U. S.
Applied Catalysis B: Environmental, vol.209, pp.80-90, 2017 (Journal Indexed in SCI)
- XXI. **Probing the Oxygen Reduction Reaction Active Sites over Nitrogen-Doped Carbon Nanostructures (CNx) in Acidic Media Using Phosphate Anion**
Mamtani K., Jain D., Zemlyanov D., Celik G., Luthman J., Renkes G., Co A. C. , Ozkan U. S.
ACS Catalysis, vol.6, no.10, pp.7249-7259, 2016 (Journal Indexed in SCI)
- XXII. **Investigation of the effect of alumina binder addition to Pd/SO₄²⁻ – ZrO₂ Catalysts during sol-gel synthesis**
Sinha Majumdar S., Celik G., Ozkan U.

Industrial and Engineering Chemistry Research, vol.55, no.44, pp.11445-11457, 2016 (Journal Indexed in SCI)

XXIII. **Performance of silicotungstic acid incorporated mesoporous catalyst in direct synthesis of dimethyl ether from syngas in the presence and absence of CO₂**

Celik G., Arinan A., Bayat A., Ozbelge H. O., Doğu T., Varışlı D.

Topics in Catalysis, vol.56, pp.1764-1774, 2013 (Journal Indexed in SCI Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **Aqueous Phase Hydrodechlorination of Trichloroethylene Using Pd Supported on Swellable Organically Modified Silica (SOMS): Deactivation Due to Chloride and Sulfur Species**
Ozkan U. S., Ailawar S. A., Hunoor A., ÇELİK G., Gunduz S., Miller J. T., Tao F. F., Edmiston P. L.
2019 AIChE Annual Meeting, Orlando, FL, 10 - 15 November 2019
- II. **Swellable Organically Modified Silica (SOMS) As a Catalyst Scaffold for Catalytic Treatment of Water through Hydrogenation and Hydrogenolysis Reactions**
Ozkan U. S., Ailawar S. A., Hunoor A., ÇELİK G., Gunduz S., Miller J. T., Tao F. F., Edmiston P. L.
2019 AIChE Annual Meeting, Orlando, FL, 10 - 15 November 2019
- III. **Catalytic upcycling of waste polymers by supported metal catalysts**
Kennedy R. M., ÇELİK G., Hackler R. A., ammal s., Ferrandon M. S., LaPointe A. M., Sadow A. D., Heyden A., Poepelmeier K. R., Delferro M.
Fall National Meeting and Exposition of the American-Chemical-Society (ACS), 25 - 29 August 2019, vol.258
- IV. **Swellable Organically Modified Silica (SOMS): A Novel Support for Aqueous Phase Hydrodechlorination of Trichloroethylene**
Ailawar S. A., ÇELİK G., Hunoor A., Gunduz S., Edmiston P. L., Ozkan U. S.
NAM 26 - North American Catalysis Society Meeting, 23 - 28 June 2019
- V. **Atomically Precise Strategy to Synthesize Bimetallic Platinum Nanoclusters for Non-Oxidative Dehydrogenation Catalysis**
ÇELİK G., Camacho-Bunquin J., Ferrandon M. S., Sohn H., Kropf A. J., Yang C., Wen J., Hackler R. A., Liu C., Marshall C. L., et al.
NAM 26 - North American Catalysis Society Meeting, 23 - 28 June 2019
- VI. **Mechanistic Studies of a Silica Supported Organovanadium(III) Catalyst for Hydrocarbon Hydrogenation and Dehydrogenation**
Kaphan D. M., Langeslay R. R., Ferrandon M. S., Liu C., ÇELİK G., Delferro M.
NAM 26 - North American Catalysis Society Meeting, 23 - 28 June 2019
- VII. **Electrophilic Pincer-Iridium (III) Complexes Supported on Metal Oxides for C-H Functionalization**
Syed Z., Kaphan D. M., Perras F. A., Pruski M., Ferrandon M. S., Wegener E. C., Kropf A. J., ÇELİK G., Wen J., Liu C., et al.
NAM 26 - North American Catalysis Society Meeting, 23 - 28 June 2019
- VIII. **Surface structural-chemical characterization of a supported organovanadium(III) catalyst**
Kaphan D. M., Langeslay R. R., Ferrandon M. S., ÇELİK G., Liu C., Sattelberger A. P., Delferro M.
257th National Meeting of the American-Chemical-Society (ACS), Orlando, United States Of America, 31 March - 04 April 2019, vol.257
- IX. **Swellable Organically Modified Silica (SOMS): A Novel Support for Pd Catalyzed Hydrodechlorination of Trichloroethylene in Aqueous Phase**
ÇELİK G., Ailawar S. A., Gunduz S., Miller J. T., Tao F. F., Edmiston P. L., Ozkan U. S.
2018 AIChE Annual Meeting, Pittsburgh, PA, United States Of America, 28 October - 02 November 2018
- X. **Hydrodechlorination of trichloroethylene using Pd catalysts supported on swellable organically modified silica (SOMS)**
Ozkan U. S., ÇELİK G., Ailawar S. A., Sohn H., Gunduz S., Edmiston P. L.
256th National Meeting and Exposition of the American-Chemical-Society (ACS) - Nanoscience, Nanotechnology and Beyond, Boston, 19 - 23 August 2018, vol.256

- XI. **Catalytic Treatment of Water Contaminated with Trichloroethylene**
ÇELİK G., Sohn H., Gunduz S., Ailawar S. A. , Edmiston P. L. , Ozkan U. S.
NAM 25 - North American Catalysis Society Meeting, Denver, 4 - 09 June 2017
- XII. **Investigation of the Effect of Alumina Binder Addition to Palladium Supported on Sulfated Zirconia Catalysts during Sol-Gel Synthesis**
Majumdar S. S. , ÇELİK G., Ozkan U. S.
NAM 25 - North American Catalysis Society Meeting, Denver, 4 June - 04 September 2017
- XIII. **Aqueous-phase Hydrodechlorination of Trichloroethene over Pd-supported on Swellable Organically-modified Silica (SOMS)**
ÇELİK G., Ailawar S. A. , Gunduz S., Miller J. T. , Tao F. F. , Edmiston P. L. , Ozkan U. S.
2016 AIChE Annual Meeting, San-Francisco, Costa Rica, 13 November 2016 - 18 November 2019
- XIV. **Wash-coat development for Lean-burn Engine-exhaust Aftertreatment: A Novel Way of Incorporation of Binder to Pd Supported on Sulfated Zirconia**
ÇELİK G., Ailawar S. A. , Gunduz S., Miller J. T. , Tao F. F. , Edmiston P. L. , Ozkan U. S.
2016 AIChE Annual Meeting, San-Francisco, Costa Rica, 13 November 2016 - 18 November 2019
- XV. **Catalytic Treatment of Water Contaminated with Chlorinated Hydrocarbons**
ÇELİK G., Ailawar S. A. , Gunduz S., Miller J. T. , Tao F. F. , Edmiston P. L. , Ozkan U. S.
2016 AIChE Annual Meeting, San-Francisco, Costa Rica, 13 November 2016 - 18 November 2019
- XVI. **Wash-Coat Development for Lean-Burn Engine-Exhaust Aftertreatment: Incorporation of Binder to Pd Supported on Sulfated Zirconia**
Majumdar S. S. , ÇELİK G., Ozkan U. S.
NAM 24 - North American Catalysis Society Meeting, Pittsburgh, PA, 14 - 19 July 2015
- XVII. **Hydrogenation and hydrogenolysis reactions involved in treatment of water contaminated with chlorinated hydrocarbons**
Sohn H., ÇELİK G., Edmiston P. L. , Ozkan U. S.
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, 21 - 25 August 2016, vol.252
- XVIII. **From synthesis gas to a clean transportation fuel dimethyl ether: New nanocomposite bifunctional catalyst pairs**
Arslan A., Bayat A., ÇELİK G., DOĞU T.
Nanotechnology 2013: Advanced Materials, CNTs, Particles, Films and Composites - 2013 NSTI Nanotechnology Conference and Expo, NSTI-Nanotech 2013, Washington, United States Of America, 12 - 16 May 2013, vol.1, pp.460-462

Citations

Total Citations (WOS):327

h-index (WOS):10

Scholarships

2232 - Uluslararası Lider Araştırmacılar Programı, TÜBİTAK, 2020 - Continues