

## Prof. Zeynep Sema BAYKARA

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, Université de Montreal, Graduate School, Mechanical Engineering, Canada 1980 - 1987

Postgraduate, The University of Salford, Graduate School, Chemical Engineering, United Kingdom 1975 - 1977

Undergraduate, Bogazici University, Faculty Of Engineering, Chemical Engineering, Turkey 1970 - 1974

### Research Areas

Chemical Engineering and Technology, Process and Reactor Design, Catalysis and Catalytic Processes, Basic Operations and Thermodynamics, Fluid Mechanics, Mechanical Engineering, Energy, Renewable Energy Systems, Hydrogen Technologies and Fuel Cells , Engineering and Technology

### Academic Titles / Tasks

Professor, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, 2018 - Continues

Professor, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, 2005 - 2018

Associate Professor, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, 1992 - 2005

Assistant Professor, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, 1990 - 1992

Research Assistant, Université de Montreal, Mechanical Engineering, Mechanical Engineering, 1980 - 1986

### Advising Theses

Baykara Z. S., Development of Catalytic Gas Filters, Postgraduate, E.Tezel(Student), 2019

Baykara Z. S., Hidrojen Üretimi Amacıyla Metal Katalizörlerin Geliştirilmesi, Doctorate, M.Karaismailoğlu(Student), 2019

Baykara Z. S., LiCu<sub>0.5</sub>Mn<sub>1.5</sub>O<sub>4</sub> AND LiNi<sub>0.25</sub>Cu<sub>0.25</sub>Mn<sub>1.5</sub>O<sub>4</sub> SPINEL ELECTRODES FOR LITHIUM-ION BATTERIES, Postgraduate, Ö.Budak(Student), 2016

Baykara Z. S., MEVCUT YAKIT ALTYAPISINI KULLANAN YENİ BİR ELEKTRİKLİ ARAÇ TASARIMI, Doctorate, E.Kınav(Student), 2015

Baykara Z. S., H<sub>2</sub>S'TEN HİDROJEN ÜRETİMİ AMACIYLA PEROVSKİT KATALİZÖRLERİN GELİŞTİRİLMESİ, Doctorate,

N.Özgür(Student), 2015

Baykara Z. S., Hidrojen Üretimi Amacıyla Muhtelif Yakıtlarla Kullanılabilecek Düşük Emisyonlu Katalitik Yakıt İşlemci İçin Katalizör Geliştirilmesi, Doctorate, H.Eren(Student), 2012

BAYKARA Z. S., Muhtelif Yakıtlardan Hidrojen Üretimi Amacıyla Katalitik Yakıt İşlemci İçin Katalizör Geliştirilmesi, Postgraduate, R.Zerrin(Student), 2010

BAYKARA Z. S., Yakıt Pili Elektrikli Araçların Tahriki İçin Farklı Tipte Batarya Gruplarının Belirlenmesi, Postgraduate, B.Aydın(Student), 2010

BAYKARA Z. S., Hidrojenin Ulaşımında Yakıt Olarak Kullanılması: Hibrit Elektrikli Şehir içi Kişisel Ulaşım Araç Konsepti, Postgraduate, E.Kınav(Student), 2007

BAYKARA Z. S., Sodyum Tetrahidroborattan Hidrojen Üretimi, Postgraduate, N.Ö.(Student), 2006

BAYKARA Z. S., Proton Değişim Membranlı Yakıt Pili Taşıtlar İçin Seyir Halinde Metanolden Hidrojen Üretimi, Postgraduate, H.Eren(Student), 2004

BAYKARA Z. S., Bir Mukavva Tesisinde Toplam Kalite Yönetimi, Postgraduate, Z.Etiğ(Student), 2001

BAYKARA Z. S., Kimyasal Proses ve Tesislerde Maliyet Analizi İçin Bir Veri Tabanı ve Kullanıcı Programı, Postgraduate, F.Özkan(Student), 1998

BAYKARA Z. S., I. ve II.Kanun Analizinde Kullanılmak Üzere Bir Termodinamik Veri Tabanı ve Kullanıcı Programı Geliştirilmesi, Postgraduate, F.Doymaz(Student), 1993

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Calcium silicate-based catalytic filters for partial oxidation of methane and biogas mixtures: Preliminary results**  
Tezel E., Balkanlı Ünlü E., Figen H. E., Baykara Z. S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.45, no.60, pp.34739-34748, 2020 (SCI-Expanded)
- II. **Methane decomposition over Fe-based catalysts**  
Karaismailoğlu M., Figen H. E., Baykara Z. S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.45, no.60, pp.34773-34782, 2020 (SCI-Expanded)
- III. **Molybdenum- and vanadium-containing perovskite electrocatalysts for dissociation of H<sub>2</sub>S**  
Karaismailoğlu M., Güldal N. Ö., Figen H. E., Baykara Z. S.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.44, no.3, pp.2368-2374, 2020 (SCI-Expanded)
- IV. **Hydrogen production by catalytic methane decomposition over yttria doped nickel based catalysts**  
Karaismailoğlu M., Figen H. E., Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.44, pp.9922-9929, 2019 (SCI-Expanded)
- V. **Hydrogen production by methane decomposition using bimetallic Ni-Fe catalysts**  
Tezel E., Figen H. E., Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.44, pp.9930-9940, 2019 (SCI-Expanded)
- VI. **Fe<sub>2</sub>O<sub>3</sub>/Y<sub>2</sub>O<sub>3</sub> Catalyst Supported on Alumina and Halloysite**  
Karaismailoğlu M., Figen H. E., Baykara S. Z.  
ACTA PHYSICA POLONICA A, vol.134, pp.57-60, 2018 (SCI-Expanded)
- VII. **Hydrogen: A brief overview on its sources, production and environmental impact**  
Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.43, pp.10605-10614, 2018 (SCI-Expanded)
- VIII. **Perovskite catalysts for hydrogen production from hydrogen sulfide**  
Güldal N. O., Figen H. E., Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.43, pp.1038-1046, 2018 (SCI-Expanded)
- IX. **Effect of ruthenium addition on molybdenum catalysts for syngas production via catalytic partial oxidation of methane in a monolithic reactor**  
Figen H. E., Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.43, pp.1129-1138, 2018 (SCI-Expanded)
- X. **Investigation of a novel & integrated simulation model for hydrogen production from lignocellulosic**

## **biomass**

Ersöz A., Durak Çetin Y., Sariođlan A., Turan A. Z., Mert M. S., Yüksel F., Figen H. E., Güldal N. Ö., Karaismailođlu M., Baykara S. Z.

INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.43, pp.1081-1093, 2018 (SCI-Expanded)

- XI. **Production of hydrogen from hydrogen sulfide with perovskite type catalysts: LaMO<sub>3</sub>**  
Guldal N. O., Figen H. E., Baykara S. Z.  
CHEMICAL ENGINEERING JOURNAL, vol.313, pp.1354-1363, 2017 (SCI-Expanded)
- XII. **An electrocatalytic membrane-assisted process for hydrogen production from H<sub>2</sub>S in Black Sea: Preliminary results**  
Ipsakis D., Kraia T., Marnellos G. E., Ouzounidou M., Voutetakis S., Dittmeyer R., Dubbe A., Haas-Santo K., Konsolakis M., Figen H. E., et al.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.40, pp.7530-7538, 2015 (SCI-Expanded)
- XIII. **Hydrogen production by partial oxidation of methane over Co based, Ni and Ru monolithic catalysts**  
Figen H. E., Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.40, pp.7439-7451, 2015 (SCI-Expanded)
- XIV. **New catalysts for hydrogen production from H<sub>2</sub>S: Preliminary results**  
Guldal N. O., Figen H. E., Baykara S. Z.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.40, pp.7452-7458, 2015 (SCI-Expanded)
- XV. **Preparation and Characterization of La MoO<sub>3</sub>, La<sub>x</sub>Sr<sub>y</sub>VzO<sub>3</sub> and La<sub>x</sub>Sr<sub>y</sub>MozO<sub>3</sub> Perovskite Type Oxides by the Sol-Gel Citrate Method**  
Figen H. E., Güldal N. Ö., Baykara Z. S.  
ACTA PHYSICA POLONICA A, vol.125, pp.278-280, 2014 (SCI-Expanded)
- XVI. **Structural Characterization of Al<sub>2</sub>O<sub>3</sub> and CeO<sub>2</sub> Supported Ni, Co Loaded Ceramic Monolithic Catalysts**  
GULDAL N. O., Baykara S. Z.  
ACTA PHYSICA POLONICA A, vol.125, no.2, pp.281-284, 2014 (SCI-Expanded)
- XVII. **Effects of Cobalt and Nickel Substitution on Physical Properties of Perovskite Type Oxides Prepared by the Sol-Gel Citrate Method**  
Yarbay R. Z., Figen H. E., Baykara S. Z.  
ACTA PHYSICA POLONICA A, vol.121, pp.44-46, 2012 (SCI-Expanded)
- XVIII. **Preparation and Characterization of Co-Mo/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub>, Ni-Mo/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> and (Co/Ni)-Mo/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Metal Oxides by Sol-Gel Process**  
Figen H. E., Baykara S. Z.  
ACTA PHYSICA POLONICA A, vol.121, pp.224-226, 2012 (SCI-Expanded)
- XIX. **An assessment of electrolytic hydrogen production from H<sub>2</sub>S in Black Sea waters**  
PETROV K., Baykara S. Z., EBRASU D., Gulin M., VEZIROGLU A.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.36, no.15, pp.8936-8942, 2011 (SCI-Expanded)
- XX. **Hydrogen from hydrogen sulphide in Black Sea**  
Baykara S. Z., Figen E. H., Kale A., Veziroglu T. N.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.32, pp.1246-1250, 2007 (SCI-Expanded)
- XXI. **Hydrogen as fuel: a critical technology?**  
Baykara S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.30, no.5, pp.545-553, 2005 (SCI-Expanded)
- XXII. **Theoretical evaluation of diffusivity of hydrogen in palladium and rhodium**  
Baykara S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.29, no.15, pp.1631-1636, 2004 (SCI-Expanded)
- XXIII. **Hydrogen production by direct solar thermal decomposition of water, possibilities for improvement of process efficiency**  
Baykara S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.29, no.14, pp.1451-1458, 2004 (SCI-Expanded)
- XXIV. **Experimental solar water thermolysis**

- Baykara S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.29, no.14, pp.1459-1469, 2004 (SCI-Expanded)
- XXV. **AN OVERALL ASSESSMENT OF HYDROGEN-PRODUCTION BY SOLAR WATER THERMOLYSIS**  
BAYKARA S., BILGEN E.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.14, no.12, pp.881-891, 1989 (SCI-Expanded)
- XXVI. **HYDROGEN CHEMISORPTION ON, AND DIFFUSION THROUGH, PALLADIUM CLUSTERS**  
BAYKARA N., ANDZELM J., SALAHUB D., BAYKARA S.  
INTERNATIONAL JOURNAL OF QUANTUM CHEMISTRY, vol.29, no.4, pp.1025-1032, 1986 (SCI-Expanded)
- XXVII. **SYNTHESIS GAS AND H-2 PRODUCTION FROM SOLAR GASIFICATION OF ALBERTAN COAL**  
BAYKARA S., BILGEN E.  
ENERGY CONVERSION AND MANAGEMENT, vol.25, no.4, pp.391-398, 1985 (SCI-Expanded)
- XXVIII. **SIGNIFICANCE OF THE CENTRAL PLUME VELOCITY FOR THE CORRELATION OF LIQUID-PHASE MIXING IN BUBBLE-COLUMNS**  
ULBRECHT J., BAYKARA Z. S.  
CHEMICAL ENGINEERING COMMUNICATIONS, vol.10, pp.165-185, 1981 (SCI-Expanded)
- XXIX. **LIQUID-PHASE MIXING AND GAS-LIQUID MASS-TRANSFER IN BUBBLE-COLUMNS WITH RHEOLOGICALLY COMPLEX LIQUIDS**  
ULBRECHT J., BAYKARA Z. S.  
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, vol.180, pp.38-37, 1980 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Sulfur Resistant Perovskite Electrocatalysts for High Temperature Applications**  
BAYKARA Z. S.  
AVRUPA BİLİM VE TEKNOLOJİ DERGİSİ, pp.98-102, 2018 (Peer-Reviewed Journal)
- II. **Küresel Isınma, İklim Değişikliği, Kyoto Protokolü, Bazı Gerçekler ve Alınabilecek Önlemler**  
BAYKARA Z. S.  
Kimya ve Sanayi, vol.1, pp.4-9, 2009 (Peer-Reviewed Journal)
- III. **Hidrojenin Günümüzdeki Durumu**  
BAYKARA Z. S.  
Tesisat Mühendisliği, vol.52, pp.53-60, 1999 (Peer-Reviewed Journal)
- IV. **Solar hydrogen production by hybrid process of water thermolysis and electrolysis**  
Baykara S., Bilgen E.  
Solar and Wind Technology, vol.6, no.3, pp.183-188, 1989 (Scopus)

## Books & Book Chapters

- I. **9.11 - Environmental Issues and Social Issues With Renewable Energy**  
Baykara Z. S., Figen H. E., Karaismailoğlu M.  
in: Comprehensive Renewable Energy, Second Edition, Trevor Letcher, Editor, Elsevier Science, Oxford/Amsterdam, Amsterdam, pp.152-164, 2022
- II. **9.08 - Environmental Issues With Hydrogen Production**  
Baykara Z. S., Figen H. E., Karaismailoğlu M.  
in: Comprehensive Renewable Energy, Second Edition, Trevor Letcher, Editor, Elsevier Science, Oxford/Amsterdam, Amsterdam, pp.107-126, 2022
- III. **Chapter 5: Black Sea and Hydrogen Sulphide**  
BAYKARA Z. S.  
in: The Black Sea: Dynamics, Ecology and Conservation, Ryann AL and Perkins NJ, Editor, Nova Science Publishers, Inc, New York, pp.151-174, 2011

#### IV. High temperature processes in chemical engineering

BAYKARA Z. S.

in: Chapter 7: Solar Thermolysis, Lackner M, Editor, Processeng Engineering GmbH, Viyana, pp.129-141, 2010

#### V. İklim Değişikliği, Alternatif Enerji Seçenekleri ve Nükleer Enerji

BAYKARA Z. S.

in: Sürdürülebilir Kalkınma için Nükleer Enerjinin Önemi, Ash Hüseyinoğlu, Editor, Tasam Yayınları, İstanbul, pp.129-141, 2006

#### VI. Hydrogen and Hydrogen Sources

BAYKARA Z. S., VEZIROGLU T. N.

in: Renewable Energies: Resource Assessment, Data Processing, Feasibility Studies, Interpretation, Policy Management, Design and Applications, Şahin A.D, Editor, Renewable Energy Research And Development Center - Su Vakfı, İstanbul, pp.35-58, 2006

### Refereed Congress / Symposium Publications in Proceedings

- I. **New perovskite electrocatalysts for sofc's with internal gasification: preliminary results**  
Tezel E., Cankurtaran H., Karaismailoğlu Elibol M., Balkanlı Ünlü E., Figen H. E., Baykara Z. S.  
3 RD INTERNATIONAL HYDROGEN ENERGY CONGRESS AND EXHIBITIONS, Ankara, Turkey, 14 - 16 June 2021, pp.1
- II. **Technology development for hydrogen production from biomass**  
Karataş H., Durak Çetin Y., Akgün F., Figen H. E., Baykara Z. S., Mert M. S., Yüksel F.  
3rd Bioenergy Studies Symposium, Samsun, Turkey, 20 - 21 May 2021, pp.50
- III. **Halloysite and Ytria Supported Ni-based Catalysts in Partial Oxidation of Biomass Model Gas**  
Karaismailoğlu M., Figen H. E., Baykara Z. S.  
World Energy Strategies Congress and Exhibition (WESCE 19), İstanbul, Turkey, 26 - 28 August 2019, pp.45-48
- IV. **Methane decomposition over Fe-based catalysts**  
Karaismailoğlu M., Figen H. E., Baykara Z. S.  
4th International Hydrogen Technologies Congress (IHTEC-2019), Edirne, Turkey, 20 - 23 June 2019, pp.449-452
- V. **Calcium Silicate-based Catalytic Filters for Partial Oxidation of Methane**  
Tezel E., Figen H. E., Baykara Z. S.  
4th International Hydrogen Technologies Congress (IHTEC-2019), Edirne, Turkey, 20 - 23 June 2019, pp.215-218
- VI. **Hydrogen Production from Methane Decomposition Using Bimetallic Ni-Fe Catalysts**  
Tezel E., Figen H. E., Baykara Z. S.  
9th International Conference on Hydrogen Production (ICH2P-18, Zagreb, Croatia, 16 - 19 July 2018, pp.46
- VII. **HYDROGEN PRODUCTION BY CATALYTIC METHANE DECOMPOSITION OVER Y DOPED NI BASED CATALYSTS**  
Karaismailoğlu M., Figen H. E., Baykara Z. S.  
9th International Conference on Hydrogen Production (ICH2P-2018), Zagreb, Croatia, 16 - 19 July 2018, pp.46
- VIII. **Fe<sub>2</sub>O<sub>3</sub>/Y<sub>2</sub>O<sub>3</sub> Catalyst Supported on Alumina and Halloysite**  
Karaismailoğlu M., Figen H. E., Baykara Z. S.  
7th International Advances in Applied Physics and Materials Science Congress Exhibition, Muğla, Turkey, 22 - 26 April 2017, pp.1-5
- IX. **Hydrogen: Sources and Production**  
BAYKARA Z. S.  
2nd International Hydrogen Technologies Congress (IHTEC-2017), Adana, Turkey, 15 March 2017, pp.21-26
- X. **Hydrogen Production from Biomass Gasification**  
DURAK ÇETİN Y., ERSÖZ A., SARIOĞLAN A., TURAN A. Z., MERT M. S., YÜKSEL F., FİGEN H. E., GÜLDAL N. Ö., KARAİSMAİLOĞLU M., BAYKARA Z. S.  
2nd INTERNATIONAL CONFERENCE ON ENERGY SYSTEMS - ICES2016, İstanbul, Turkey, 21 - 23 December 2016, pp.356-367

- XI. **Perovskite catalysts for hydrogen production from hydrogen sulfide**  
 Güldal N. Ö., Figen H. E., Baykara Z. S.  
 2nd INTERNATIONAL CONFERENCE ON ENERGY SYSTEMS - ICES2016, İstanbul, Turkey, 21 - 23 December 2016, pp.1-5
- XII. **Effect of Ruthenium Addition on Molybdenum Catalysts for Syngas Production via Catalytic Partial Oxidation of Methane in a Monolithic Reactor**  
 Figen H. E., Baykara Z. S.  
 2nd INTERNATIONAL CONFERENCE ON ENERGY SYSTEMS - ICES2016, İstanbul, Turkey, 21 - 23 December 2016
- XIII. **CARTRIDGE ELECTRIC VEHICLE MODEL: A NEW APPROACH FOR TRANSITION TO ELECTRIFICATION**  
 Kınav E., BAYKARA Z. S.  
 2nd International Hydrogen Energy Congress and Exhibition, İstanbul, Turkey, 08 June 2014, pp.1-10
- XIV. **Hydrogen Production by Partial Oxidation of Methane over Co Based, Ni and Ru Monolithic Catalysts**  
 FİGEN H. E., BAYKARA Z. S.  
 13th International Conference on Clean Energy 2014 (ICCE-2014), İstanbul, Turkey, 8 - 12 June 2014, pp.1016-1027
- XV. **New Catalysts for Hydrogen Production from H<sub>2</sub>S : Preliminary Results**  
 GÜLDAL N. Ö., FİGEN H. E., BAYKARA Z. S.  
 13th International Conference on Clean Energy 2014 (ICCE-2014), İstanbul, Turkey, 8 - 12 June 2014, pp.1110-1115
- XVI. **An electrocatalytic membrane-assisted process for hydrogen production from H<sub>2</sub>S in Black Sea: Preliminary results**  
 IPSAKIS D., KRAIA T., MARNELLOS G., OUZOUNIDOU M., Voutetakis S., DITTMAYER R., DUBBE A., HAAS SANTO K., KONSOLAKIS M., FİGEN H. E., et al.  
 13th International Conference on Clean Energy 2014 (ICCE-2014), İstanbul, Turkey, 8 - 12 June 2014, pp.1028-1035
- XVII. **Partial Oxidation of Methane Over Ni-Mo, Co-Mo and Ni-Co-Mo Monolithic Catalyst for Hydrogen Production**  
 FİGEN H. E., BAYKARA Z. S.  
 5th World Hydrogen Technologies Convention (WHTC 2013), ŞANGAY, China, 25 - 28 September 2013, pp.190
- XVIII. **Development of a proton-conducting electrochemical membrane reactor for catalyst-aided generation of hydrogen from H<sub>2</sub>S-H<sub>2</sub>O mixtures**  
 Marnellos G., Voutetakis S., Ouzounidou M., Kraia T., BAYKARA Z. S., Dubbe A.  
 International Conference on Catalysis in Membrane Reactors (ICMMR 11), 01 July 2013
- XIX. **Synthesis and Characterization of La<sub>x</sub>Me<sub>1-x</sub>CoO<sub>3</sub> Catalyst Prepared by Sol-Gel Method**  
 Yarbay Şahin R. Z., Figen H. E., Baykara Z. S.  
 4th National Catalyst Conference (NCC-4), Kocaeli, Turkey, 21 March 2012, pp.1
- XX. **Black Sea Hydrogen (Keynote paper),**  
 BAYKARA Z. S.  
 UNIDO-ICHET, Black Sea Hydrogen Sulfide Workshop, 01 December 2011
- XXI. **Partial Substitution of Lanthanum with Silver and Strontium in the LaNiO<sub>3</sub> Perovskite: Effect of the Preparation Method**  
 YARBAY R. Z., BAYKARA Z. S.  
 Energy Challenges for Advanced Materials and Processes (ECAMP 2011) May 25-29, 2011, Cappadocia, Turkey, Niğde, Turkey, 25 May 2011, pp.1-10
- XXII. **Preparation and Characterization of Co-Mo/g-Al<sub>2</sub>O<sub>3</sub>, Ni-Mo/g-Al<sub>2</sub>O<sub>3</sub> and (Co/Ni)-Mo/g-Al<sub>2</sub>O<sub>3</sub> Metal Oxides by Sol-Gel Process**  
 FİGEN H. E., BAYKARA Z. S.  
 Advances in Applied Physics and Materials Science Congress (APMAS 2011), Antalya, Turkey, 12 - 15 May 2011, pp.164
- XXIII. **Effects Of Cobalt And Nickel Substitution On Physical Properties of Perovskite Type Oxides Prepared By The Sol-Gel Citrate Method**

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Advances in Applied Physics and Materials Science Congress (APMAS 2011), Antalya, Turkey, 12 - 15 May 2011, pp.364

- XXIV. **A Brief Assessment of Hydrogen Production from H<sub>2</sub>S in Black Sea Waters**  
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World Hydrogen Technologies Convention 2009 (WHTC-2009) August 26-28 2009, New Delhi, India. (Keynote paper), 01 August 2009
- XXV. **Feasibility Study of Hydrogen Production from H<sub>2</sub>S in Black Sea Waters**  
BAYKARA Z. S.  
The 14th Conference Progress in Cryogenics and Isotopes Separation, Oct 29-31 2008 Calimanesti -Caciulata, Valcea, Romania, 01 October 2008
- XXVI. **Crystallographic Structure of LiCoO<sub>2</sub> based Ruthenium Catalyst for Sodium Borohydride Hydrolysis**  
Figen H. E., Kantürk A., Güldal N. Ö., Baykara Z. S., Pişkin S.  
XXI Congress of the International Union of Crystallography (IUCr 2008), Osaka, Japan, 23 - 31 August 2008, vol.64, pp.530
- XXVII. **On-Board Hydrogen Production and Catalyst Manufacturing for Fuel Processors**  
FİGEN H. E., GÜLDAL N. Ö., BAYKARA Z. S.  
European Technology Platform for Sustainable Chemistry: SusChem Stakeholder Workshop 2nd Brokerage Event, Berlin, Germany, 29 - 30 January 2008
- XXVIII. **Hydrogen Production from H<sub>2</sub>S in Black Sea and Industrial Waters Using Green Energy**  
Petrov K., BAYKARA Z. S.  
The 13th Conference Progress in Cryogenics and Isotopes Separation, Nov 7 2007, Calimanesti - Caciulata, Valcea, Romania, Valcea, Romania, 07 November 2007, pp.1-10
- XXIX. **Catalytic hydrolysis of alkaline NaBH<sub>4</sub> solutions for hydrogen generation**  
GÜLDAL N. Ö., FİGEN H. E., BAYKARA Z. S.  
2nd International Hydrogen Energy Congress and Exhibition, İstanbul, Turkey, 13 - 15 July 2007
- XXX. **Hydrogen Energy and Hydrogen Production from H<sub>2</sub>S in Black Sea Waters**  
BAYKARA Z. S.  
Proc. 12th International Conference Progress in Cryogenics and Isotopes Separation October 25-27, 2006, Calimanesti -Caciulata, Valcea, Romania (Invited Presentation), 01 October 2006
- XXXI. **Ecohealth Problems and Climate Change I: Anthropogenic Climate Change and Ecohealth: Worldwide Environmental Damage**  
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- XXXII. **Possibilities for Hydrogen Production from H<sub>2</sub>S in Black Sea**  
BAYKARA Z. S.  
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- XXXIII. **Hydrogen from H<sub>2</sub>S in the Black Sea**  
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- XXXIV. **Seyir Halinde Hidrojen Üretimi**  
BAYKARA Z. S., FİGEN H. E.  
2.Ulusal Hidrojen Konferansı, Ankara, Turkey, 09 July 2003, pp.99-103
- XXXV. **Hybrid Hydrogen Production by Solar Water Thermolysis and Electrolysis**  
BAYKARA Z. S.  
10th Brazilian Congress on Mechanical Engineering, 5-8 Dec. 1989, Rio de Janeiro, Brazil, 01 December 1989
- XXXVI. **Solar Hydrogen Production from Water and Coal: An Engineering and Economic Assessment**  
BAYKARA Z. S.  
14th World Energy Conference , September 17 -22 1989, Montreal Canada, 01 September 1989
- XXXVII. **STATE OF THE ART REVIEW OF SOLAR WATER THERMOLYSIS.**

Baykara S., Bilgen E.

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## Supported Projects

Baykara Z. S., Figen H. E., Cankurtaran H., EU Supported Other Project, Direct Conversion of Biomass to Electricity in MED area via an Internal Catalytic Gasification Solid Oxide Fuel Cell, 2017 - 2022

Baykara Z. S., Figen H. E., TUBITAK Project, Biyokütleden Gazlaştırma Yoluyla Hidrojen Üretim Teknolojisi, 2016 - 2020

Baykara Z. S., Çorbacıoğlu B. D., Figen H. E., EU Supported Other Project, Hydrogen production from H<sub>2</sub>S decomposition in micro-structured proton-conducting solid oxide membrane reactors (BS-ERA.NET Project ), 2011 - 2016

Görgün H., Baykara Z. S., Project Supported by Other Official Institutions, Elektrikli Aracın Türkiyedeki uygulamasına yönelik alt yapı araştırması, 2011 - 2012

BAYKARA Z. S., Project Supported by Higher Education Institutions, Muhtelif Yakıtlı, Düşük Emisyonlu Yakıt İşlemci Geliştirilmesi ve Seyir Hali Koşullarında Denenmesi YTU-APK (No : 27-07-01-07), 2007 - 2011

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BAYKARA Z. S., Project Supported by Higher Education Institutions, Kimyasal Proses ve Tesislerde Maliyet Analizi İçin Bir Veri Tabanı ve Kullanıcı Programı, 1996 - 1998

BAYKARA Z. S., Project Supported by Higher Education Institutions, I. ve II. Kanun Analizlerinde Kullanılmak Üzere Bir Termodinamik Veri Tabanı ve Kullanıcı Programı Geliştirilmesi YTÜ Araştırma Fonu (No: 91-B-04-08-04), 1992 - 1995

BAYKARA Z. S., Project Supported by Other Official Institutions, MKEK Güneş Toplayıcılarının Performansının Belirlenmesi, 1997 - 1988



## Activities in Scientific Journals

International Journal of Hydrogen Energy, Committee Member, 2010 - Continues

Progress of Croyogenics and Isotopes Separation, Committee Member, 2009 - Continues

## Memberships / Tasks in Scientific Organizations

Hidrojen Teknolojileri Derneği, Board Member, 2016 - Continues

American Chemical Society, Member, 2010 - Continues

International Solar Energy Society, Member, 2010 - Continues

Kimya Mühendisleri Odası,, Member, 2000 - Continues

International Association for Hydrogen Energy, Member, 1990 - Continues

## Scientific Refereeing

International Journal of Hydrogen Energy, SCI Journal, January 2015

International Journal of Hydrogen Energy, SCI Journal, January 2015

International Journal of Hydrogen Energy, National Scientific Refreed Journal, November 2014

International Journal of Hydrogen Energy, SCI Journal, October 2014

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International Journal of Hydrogen Energy, SCI Journal, February 2014

International Journal of Hydrogen Energy, SCI Journal, November 2013

International Journal of Hydrogen Energy (SZ. Baykara), SCI Journal, October 2012

Journal of The Electrochemical Society (SZ. Baykara), SCI Journal, May 2012

Applied Energy (SZ. Baykara), SCI Journal, January 2012

Journal of Energy Engineering (SZ. Baykara), SCI Journal, December 2011

Applied Energy (SZ. Baykara), SCI Journal, December 2011

International Journal of Hydrogen Energy (SZ. Baykara), SCI Journal, November 2011

Applied Energy (SZ. Baykara), SCI Journal, October 2011

International Journal of Hydrogen Energy (SZ. Baykara), SCI Journal, September 2011

Applied Energy (SZ. Baykara), SCI Journal, June 2011

International Journal of Hydrogen Energy (SZ. Baykara), SCI Journal, March 2011

International Journal of Hydrogen Energy (SZ. Baykara), SCI Journal, December 2010

International Journal of Hydrogen Energy (SZ. Baykara), SCI Journal, December 2010

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## Metrics

Publication: 83

Citation (WoS): 842

Citation (Scopus): 1033

H-Index (WoS): 17

H-Index (Scopus): 19

## Scholarships

Theoretical Challenges in Complex Fluid Dynamics, NATO, 1996 - Continues

Computational Fluid Dynamics, Other International Organizations, 1993 - Continues

NATO Collaborative Research Grant, NATO, 1990 - Continues

NATO Collaborative Research Grant, NATO, 1988 - Continues

NATO Collaborative Research Grant, NATO, 1987 - Continues

Doktora Bursu, Official Institutions of Foreign Countries, 1980 - Continues

Measurement Techniques in Fluid Dynamics, NATO, 1976 - Continues

TUBITAK - USSR Academy of Sciences Exchange Program Scholarship, Luikov Institute for Heat and Mass Transfer, (Minsk), Other International Organizations, 1987 - 1987

TUBITAK - USSR Academy of Sciences Exchange Program Scholarship, Luikov Institute for Heat and Mass Transfer, (Minsk), Ivtan High Temperature Institute (Moscow), High Temperature Institute (Tashkent), Other International Organizations, 1986 - 1986

## **Non Academic Experience**

Yıldız Teknik Üniversitesi

Other Public Institution, TUBITAK, Department of Machinery and Energy

TÜBİTAK - MAM

Montreal Üniversitesi, Kanada

Other Public Institution, TUBITAK, APPLIED PHYSICS UNIT

TÜBİTAK - MAM