CURRICULUM VITAE

1. PERSONAL DATA

Date of birth : 2 January 1962
Place of birth : Adapazarı, Turkey
Marital Status : Married and have 3 kids

Prof. Dr. I. Bedii Ozdemir

School of Mechanical Engineering
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2. ACADEMIC AND EDUCATIONAL QUALIFICATIONS

Full Professor, 1999-present
İstanbul Technical University
University Associate Professor, 1994
İstanbul Technical University.
Associate Professor, 1993
Without being a member of a university, I have been awarded with this title by the Scientific Committee of the Association of the Turkish Universities.
Post-doctoral Research, 1992
Imperial College of Science, Technology and Medicine (UK)
Mechanical Engineering Department, Thermofluids Section
Period: a year in between 11/1991-9/1992
Sponsored by the Science and Engineering Research Council-UK (SERC)
Ph.D., D.I.C., 1992
Imperial College of Science, Technology and Medicine (UK)
Mechanical Engineering Department, Thermofluids Section
Period: three years in between 9/1988-2/1992
Sponsored by SERC, FORD UK & European Commission
Dipl. VKI, 1988
von Karman Institute for Fluid Dynamics (Belgium)
Environmental & Applied Fluid Mechanics
Period: ~ a year in between 9/1987-7/1988
Sponsored by NATO
M.Sc., 1987
Tennessee Technological University (USA)
Mechanical Engineering Dept., Fluid/Thermal Sciences
Period: two years in between 9/1985-7/1987
Sponsored by Department of Energy (USA) & Martin Marietta Energy Systems Inc.
B.Sc., 1985
Boğaziçi University (Turkey)
Mechanical Engineering Department, Energy Division
Period: five years in between 9/1980-7/1985 (including a year in preparatory school of English)

3. AWARDS

AvH Fellowship, 03.06-30.08 2019 by the Alexander von Humboldt Foundation. Hosted by Prof. Dr. Steven Beale and Prof. Dr. Werner Lehnert at the Institut fuer Energie- und Klimaforschung (IEK), IEK-3: Elektrochemische Verfahrenstechnik, Forschungszentrum Juelich GmbH.

AIY Technologies, established by Prof. Dr. Bedii Özdemir at the ITU Ari Technology Park, is the winner of the 11. Technology Award of Turkey, organized by TUBITAK, TTGV and TUSIAD, 2014.

AvH Fellowship, 01/2002-07/2002 and 15.05-15.08 2005, by the Alexander von Humboldt Foundation. Hosted by late Prof. Dr. Dr. Hon. Juergen Warnatz at the Interdisziplinares Zentrum für Wissenschaftliches Rechnen (IWR), Ruprecht-Karls-Universität Heidelberg.

AvH Fellowship, 8/1998-8/1999, by the Alexander von Humboldt Foundation. Hosted by late Prof. Dr. Dr. Hon. Norbert Peters at the Institut für Technische Mechanik, RWTH Aachen.

Overseas Research Student Award, (three times) 1989, 1990 and 1991, by the Committee of Vice-chancellors and Principals of the Universities of the United Kingdom.

4. PROFESSIONAL BACKGROUND AND EXPERIENCE

4.1 List of Projects Conducted

- Modelling of Reaction and Injection Molding of Polyurethane Foam in Refrigerators (2013-2015) Sponsored by Ministry of Industry, contract number 01213.STZ.2012-1
- Flow and Combustion Analyses of Domestic Cookers, (2011-2013) Sponsored by Turkish Scientific and Technological Research Council (TUBITAK), contract number 110M506
- Flow and Combustion Analyses of Domestic Oven Burners, (2011-2013) Sponsored by Arçelik Inc.
- Experiments and Modeling of Performance of Anti-Ice jets on Vanes of Front Bearing Structures, (2011-2011) Sponsored by TEI Engine Industries Inc.
- Simulation of Reactive Flows in Nitriding Furnaces, (2010-2013) Sponsored by Robert BOSCH Inc.
- High Performance Low-Noise Industrial Type Axial Fan Design, (2009-2013) Sponsored by Ministry of Industry, contract number 00452.STZ.2009-2
- Use of ILDM and CFD methodologies for Reducing Emissions from Diesel Engines (2006-2008) Sponsored by Turkish Scientific and Technological Research Council (TUBITAK), contract number 106M228
- Application of LES to Combustion in Gas Turbines (2001-2005) Sponsored by the Alexander von Humboldt Foundation
- Drag Induced on Vehicles by the Main Body and Accessories and the Effects on Fuel Consumption (2000-03) Sponsored by TUBITAK and TOFAŞ R&D (subsidiary of FIAT), contract number MISAG-163
- Use of Laser Induced Fluorescence for the Control of Combustion in Low-NOx Burners with Strong Internal Flue Gas Recirculation (1998-99) Sponsored by the Alexander von Humboldt Foundation
- Study on Missile Aerodynamics and Jet Effects on a Model Geometry (1997-98) Sponsored by TUBITAK, contract number MISAG-98
- Vorticity Generated by Side Jets (1997-99) Sponsored by Defense Industries Research and Development Institute (SAGE), contract number 97M201

- Unsteady Flow and Vorticity Interactions at High Angle of Attack (1997-98) Sponsored by SAGE, contract number 97M202
- Reduction of Missile Dispersion (1997-98) Sponsored by State Planning Organization of Turkey (DPT), contract number DPT 97K121540
- Reduction of Missile Dispersion with Increased Flight Stability (1996-98) Sponsored by the University Research Funds-ITU, contract number AF711
- Supersonic Jet/Wall Interactions (1995-97) Sponsored by SAGE, contract number 95M909
- Aerodynamics of Crossflow with Side Jets (1995-97) Sponsored by SAGE contract number 95M910
- A Design Method for Ventilation Systems and Fume Cupboards (1991-92) Sponsored by the Science and Engineering Research Council (UK), contract No: GR-G52449
- Spray/Wall Interactions (1990-91) Sponsored by European Commission, contract No: JOULE-0056-C (MB)
- Development of a Measurement Technique for Unsteady Films (1990-91) Sponsored by Ford Motor Co UK
- Energy Auditing in Commercial Buildings (1986-87) Sponsored by Department of Energy (USA) and Martin Marietta Energy Systems Inc., contract No: DE-AC05-840R21400

4.2 Setting-up Laboratories

Established two laboratories and carrying their responsibilities (please also see http://www.akis.itu.edu.tr):

Subsonic Flows Laboratory:

- ANKA facility: It is an open circuit wind tunnel with 0.5×0.5 m2 test section and max. velocity of 60 m/s and turbulence intensity of 0.5%.
- TURNA set-up: It is a jet facility with 52 mm-diameter nozzle exit and max. velocity of 95 m/s and turbulence intensity of 0.1%.

Both set-up can be equipped with 3D hot-wire anemometry, various piezo-resistive and strain-gauge pressure sensors and optical devices for flow visualization.

Supersonic Flows Laboratory:

- ISLIK Supersonic Test Facility is a blow-down jet facility with variable nozzle, and can also be used as a supersonic tunnel operating at Mach number as high as 2.45, and equipped with hot-film anemometry and optical set-up for shadowgraph technique.

4.3 Setting-up an Innovation Company

Established the company FLOW, HEAT AND COMBUSTION (AIY) TECHNOLOGIES which is the recipient of the 2014 11. Technology Award of Turkey organized by TUBITAK, TTGV and TUSIAD.

4.4 Theses Supervised

Ph.D.

- Calculation of Fluid-Structure Interactions in Blood Flows – Modelling of Aneurysms and Flow Deflectors, Thesis by Hamed Pahlavani, in progress.
- Non-premixed Combustion Downstream of Conical Burners, Thesis by Alper Ata, in progress.
- Modeling of Turbulent Combustion in Diesel Engines, Thesis by Cengizhan Cengiz, in progress.

- Design and Modelling of Efficient Marine Propellers, Thesis by Emre Güngör, 2014-2018.
- Modelling of Turbulent Combustion in a MILD Combustion Burner, Thesis by Artan Hoxha, 2009-2013.
- Modelling of Turbulent Combustion in Diesel Engines using ILDM Chemistry, Thesis by Altin Dorri, 2008-2011.

M.Sc.

- Modeling of Dynamic Contact Angle in Droplet-Wall Interactions - Code Development for OpenFOAM, Thesis by T. Tekin Filiz, in progress.
- Use of ILDM to reduce Methane/Oxygen Combustion Kinetics, Thesis by Mert Zenginer, in progress.
- Use of modes of Hydrodynamic Stability in Defining Inflow Boundary Conditions for LES of Swirling Jets, Thesis by Amir Mehrabi, in progress.
- Use of Hydrodynamic Stability Analysis for Defining Inflow Boundary Condition of a Round Turbulent Jet, Thesis by E. Cenk Ersan, 2014-2017.
- Numerical Investigation of Aerodynamic and Aeroacoustic Properties of a Supersonic Jet, Thesis by Ramiz Ömür İçke, 2014-2015.
- Evaluation of an Automotive Air Intake System in Terms of Pressure Loss and Flow Characteristics, Thesis by Anıl Can Ağar, 2014-2015.
- Design of a Refrigerator Cabinet based on Solidification Process of Polyurethane Foam Flow, Thesis by Hamed Pahlavani, 2013-2015.
- Design of New Refrigerator Cabinet with Optimized Injection Process of Insulation Material, Thesis by Fırat Akar, 2013-2015.
- Performance Comparison of k-epsilon, LES and DES Turbulence Models in the Prediction of Vehicle Fire in Closed Parking Spaces, Thesis by Barış Elbüken, 2011-2013.
- Design and Analysis of a Propeller for Underwater Vehicles using Computational Fluid Dynamics, Thesis by Emre Güngör, 2010-2012
- Flow Simulation of High Speed High Pressure Radial Blower, Thesis by Özge Özgül, 2011-2012.
- Noise Propagation from a Cylinder Placed in a Curved Duct, Thesis by Seher Kahraman, 2008-2010.
- Aero-acoustic Properties of a Radial Fan, Thesis by Hande Bezci, 2007-2009.
- Prediction of Combustion in a Diesel Engine Using Intrinsic Low Dimensional Manifolds (ILDM) Technique, Thesis by Ozer Bagci, 2006-2009.
- Modeling of Combustion in Diesel Engines, Thesis by Cengizhan Cengiz, 2006-2008.
- Calculations of Flow and Noise Propagation in Axial Fans, Thesis by Dizcer Gizli, 2006-2008.
- Calculations of Flow and Noise Propagation in Centrifugal Fans, Thesis by Korcan Kucukcoskun, 2006-2008.
- Investigation of Turbulent Modes of Air Flow in a Pipe Using Hydrodynamic Stability Analysis, Thesis by Atilla Altintas, 2006-2007.
- Large-Eddy Simulation of 3D Flow behind a Model Car, Thesis by Zafer Zeren, 2004-2006.
- Generation of Inflow Boundary Conditions for Time Dependent Simulations of N-S Equations, Thesis by Engin Orcun Kozaka, 2002-2005.
- An Application of Intrinsic Low-Dimensional Manifold Method to an Engineering Reactive Flow, Thesis by Baris Ali Sen, 2002-2003.
- Wake Structure of a 3D Car Model Exposed to Crosswind, Thesis by Esra Ozdemir, 1999-2001.
- Aero-acoustical study of a Side Mirror of a Passenger Car, Thesis by Omer Dolek, 1998-2001.
- Structure of Two-Phase Supersonic Free Jets, Thesis by Gokhan Ozkan, 1997-2000.
- Unsteady Interactions of Crossflow Vortices with Missile Body, Thesis by Aydın Hamamcioglu,1997-99.
- Effect of Nose Geometry on the Flow behind a Model Rocket at High Angle of Attack, Thesis by Timucin Serdaroglu, 1997-98.

- Supersonic Jet-Wall Interactions, Thesis by Metin Ucak, 1995-97.
- Aerodynamics of Crossflow with Side Jets, Thesis by Fatih Gunes, 1995-97.

B.Sc.

- Design and CFD Simulation of a New Generation Propeller with 3D Design Features for an Electric-Powered Airplane, Thesis by A. İhsan İşgüder and Safa Tarakçı, in progress.
- Investigation of the Effect of Rotor Height on the Performance of a High Speed Mixed-Type Compressor, Thesis by M. Can Durukan and Metehan Duman, in progress.
- CFD Simulation of a Nasal Air Flow, Thesis by Furkan Mataracı and Ulvi Kerimov, in progress.
- Study of the Effect of Cone Height of an Elevated Rotor on the Performance of Radial Blowers, Thesis by Esra H. Işık and Mustafa Şengül, 2019
- Design and Analysis of 3-Member Family of Mixed-Type Compressors, Thesis by M. Batuhan Köroğlu and Osman Sengir, 2019
- Analysis of Design-Dependent Flow-Induced Noise in Exhaust Mufflers, Thesis by Utkan Çalışkan and Yağız Fürat, 2015
- Reduction of Flow Induced Noise in Combustion Systems, Thesis by Özgür Kayhan and Emre Cenk Ersan, 2014
- Simulation of Polyurethane Injection into a Refrigerator Cabinet, Thesis by Serkan Solmaz and Çağlar Şahin, 2014
- Design Fuel valve for Gas Burners, Thesis by İbrahim İlker Kılıç, Burak Keskin and Hasan Volkan Kılıç, 2013
- Simulation of Polyurethane Molding in an Idealized Geometry, Thesis by Hayrettin Karadağ and M. Cihan Yenigün, 2012
- Calculations and Measurements of Acoustic Performance of an Axial Fan, Thesis by Ferhad Kaleli, Cem Cebioğlu, Ömer İsmailoğlu and Yalın Özgencil, 2011.
- CFD Analysis of an Industrial Axial Fan, thesis by, Adem Candaş, H. Erkan Çeliker & Ersin Özbalaban, 2010.
- LES Calculations in Axial Fans, thesis by Selahattin Dogramaci, 2007.
- Design of Piston and Cylinder Geometry in Internal Combustion Engines Using In-Cylinder Flow Properties, thesis by Cengizhan Cengiz and Onur Çiçek, 2006.
- Aero-Acoustic Design of Passenger Vehicles Using Large Eddy Simulations with Proper Inflow Conditions, thesis by Korcan Kucukcoskun, Dincer Gizli, and Dogan Sevim, 2006.
- Design and Performance Analysis of a Rocket Fore-body, thesis by Emrah Golbasi and Cengiz Omer Koc, 2004.
- Design of a Smoke Generator, thesis by Yucel Kaya, Ongun Ozcelik and Yavuz Sahin, 2004.
- Aerodynamic Performance of a Model Car, thesis by Engin Orcun Kozaka, 2002.
- Turbulence Measurements at the Exit of a Round Jet, thesis by Omer Kucuksavas, 2002.
- Yaw-asymmetry of Flow over Bluff Bodies Spinning at High Angles of Attack, thesis by Tekin Olmez, 2001.
- Dynamics of Shock Structures Developing due to Supersonic Jets Exhausted into Tubular Confined Spaces, thesis by Ayşegul Gungor, 2001.
- Investigation of Flow Characteristics behind a Model Car without Ground Effect, thesis by Didem Colakel, 2001.
- Investigation of Flow Characteristics behind a Model Car with Ground Effect, thesis by Baris Ali Sen, 2001.
- Effects of Angle of Attack and Nose Bluntness on the Shocks Developing over a Model Rocket Body, thesis by Mustafa Yilmaz, 2000.
- Shock Structures Developing over the Spinning Bluff Bodies, thesis by Erhan Sarica, 2000.
- Effect of Nose Geometry on the Shocks Developing over the Spinning Bluff Body, thesis by Gokmen Aksoy, 1998.

- Effects of Rear Wings on the Exhaust Flow behind a Model Rocket, thesis by Taner Yildirim, 1998.
- Study on Characteristics of Supersonic Free Jets, thesis by Ozgür Sarifakioglu, 1998.
- Effects of Forebody Geometry on the Flow behind a Rocket, thesis by Gokhan Ozkan, 1997.
- Effects of Second Phase on the Characteristics of Rocket Exhausts, thesis by Alper Ata, 1997.
- Interactions of the Flow over Rocket Body and the Exhaust, thesis by Burak Tekin, 1997.
- Study on Supersonic Flow over a Model Rocket Geometry, thesis by Teoman Aycicek, 1997.
- Feedback Mechanisms in the Nearfield of Supersonic Jets, thesis by Emre Utkan, 1997.
- Supersonic Jet/Wall Interactions, thesis by Mete Kayisbudak, 1997.
- Dynamic Modeling of Flow in the Fume Cupboards, thesis by Ata Demiray, 1996.
- Study on Turbulence Characteristics of Jets; Jet Impingements, thesis by Metin Ucak, 1995.
- Study on Characteristics of Annular Jets, thesis by Yasar Taskin, 1995.

4.5 Academic Duties

- Visiting (as an expert) to the Polytechnical University of Tirana to establish a research group on Computational Combustion, 6-7 2010, assigned and sponsored by the IDB.
- Visiting, IWR, Ruprecht-Karls-Universität Heidelberg, 5-8 2005, 6-8 2004, 6-9 2003,12/2001-1/2003.
- Representative of the Faculty of Mechanical Engineering in the Educational Commission of the ITU Senate, 8/2000-9/2004.
- Member of the Governing Body, ITU University Research Fund, 1/2001-12/2001.
- Professor, Faculty of Mechanical Engineering, Istanbul Technical University, 12/1999-
- Visiting, RWTH Aachen, 8/1998-8/1999.
- Coordinator, Defense Technologies Program of the Graduate School, Istanbul Technical University, 1/1997-6/1998.
- Associate Professor, Faculty of Mechanical Engineering, Istanbul Technical University, 6/1994-12/1999.
- Research Associate, Mechanical Engineering Dept., Imperial College, 7/1991-9/1992.
- Teaching Assistant, Mechanical Engineering Dept., Imperial College, 9/1990-1/1991.
- Research Assistant, Center for Electric Power, Tennessee Tech. Univ., 9/1985-7/1987.
- Teaching Assistant, Physics Dept., Boğaziçi University, 9/1984-1/1985.

4.6 Teaching Duties

- Mechanics of Turbulence (3-0-0), post-graduate course (lectures are given in English).
- Hydrodynamic Stability (3-0-0), post-graduate course (lectures are given in English).
- Advanced Fluid Dynamics (3-0-0), post-graduate course (lectures are given in English).
- Design, Methods and Analysis of Engineering Experiments (3-0-2), undergraduate course (lectures are given in English).
- Gas Dynamics (3-0-0), undergraduate course (lectures are given in English).
- Dynamics (3-2-0), undergraduate course.
- Statics (3-1-0), undergraduate course.
- Fluid Mechanics (4-0-0), undergraduate course.
- Advanced Fluid Mechanics (3-0-0), undergraduate course (lectures are given in English).
- Mechanical Engineering Design Project (1-0-0), undergraduate course.
- Engineering Experimentation (3-0-0), undergraduate course.

*Note that (3-0-0) stands for (theory-problem sessions-lab.) hours per week.

4.7 Talks given

- Role of Surface Chemistry and Flow Process in Nitriding Heat Treatments, CERTD in Thermo-Fluid Dynamics, 26-30 May 2014 Özyeğin University.
- Modelling and Simulation of Nonpremixed Flames, 10 April 2015, Dept. of Physics, ITU.
- The Effect of Chemical Time Scales on Local Extinction of Non-Premixed Flames, 20 October 2005, at the Dept. of Mechanical Engineering, Koc University, Istanbul.
- Research on Car Aerodynamics at ITU, 1 July 2002, at the IWR, University of Heidelberg, Germany.
- Turbulent Wake Structure of a Model Passenger Car with Relevance to Cross-wind Stability, 14 June 2002, at the LSTM, University of Erlangen, Germany, with invitation from Prof. Dr. F. Durst.
- Defense Technologies Program at ITU, 14 May 1998, at Polatlı Military School of Artillery & Missiles, Ankara.

5. PUBLICATIONS

Journal

- OZDEMIR, I.B. **2021** Model development and simulation of phase-changing two-phase flow in a porous layer of mm size: Geometric and algebraic level-set approaches for the interface movement, under preparation.

- DURUKAN, M.C. & OZDEMIR, I.B. **2021** Comparative performance analyses of novel mixed-flow type compressor designs having conical rotors with different heights, under preparation.

- ISGUDER, A.I., TARAKCI, S. & OZDEMIR, I.B. **2021** Design and analyses of an e-powered aircraft propeller with 3D design features, under preparation.

- MEHRABI, A. & OZDEMIR, I.B. **2020** Use of hydrodynamic stability analysis in investigation of turbulent modes in: Part 2. Swirling jet flow, under review, Journal of Fluid Mechanics.

- MEHRABI, A. & OZDEMIR, I.B. **2020** Use of hydrodynamic stability analysis in investigation of turbulent modes in: Part 1. Swirling pipe flow, under review, Journal of Fluid Mechanics.

- MATARACI, F., KERIMOV, U., OZDEMIR, I.B., YILDIRIM, D. & ALTINDAG, A. **2020** CFD simulations and analyses of asymptomatic and symptomatic nasal airway obstructions, under review, Journal of Mechanics in Medicine and Biology.

- ATA, A. & OZDEMIR, I.B. **2020** Stability characteristics of a turbulent nonpremixed conical bluff body flame, under review, Propulsion and Power Research.

- SENGUL, M., ISIK, E.H. & OZDEMIR, I.B. **2020** Models for droplet motion on hydrophilic and hydrophobic surfaces, accepted by Heat Transfer Engineering Journal.

- ATA, A. & OZDEMIR, I.B. **2020** Study on the effects of cone height on the turbulent nonpremixed flames downstream of a conical bluff body, Journal of Thermal Science and Engineering Applications (ASME) DOI: https://doi.org/10.1115/1.4048678.

- SERDAROGLU, T., PAHLAVANI, H. & OZDEMIR, I.B. **2020** Effects of forebody geometry on side forces on a cylindrical afterbody at high angles of attack, J Aerosp Eng Mech (DOI: http://dx.doi.org/10.36959/422/439) 4(1):177-186.

- ISIK, E.H., SENGUL, M. & OZDEMIR, I.B. **2019** A CFD-based study on the effect of cone height of an elevated rotor on the performance of radial blowers, WSEAS TRANSACTIONS on COMPUTERS, **18**: 248 - 255.

- ATA, A. & OZDEMIR, I.B. **2019** Effects of the cone angle on the stability of turbulent nonpremixed flames downstream of a conical bluff body, Heat and Mass Transfer (DOI: http://dx.doi.org/10.1007/s00231-019-02789-6).

- GUNGOR, E. & OZDEMIR, I.B. **2018** Prediction of noise and acoustical spectrum of counter-rotating propellers, Journal of Ship Research (DOI: http://dx.doi.org/10.5957/JOSR.170050).

- OZDEMIR, I.B. & CENGIZ, C. **2018** Use of modified temperature-composition PDF formulation in modeling of flame dynamics in Diesel engine combustion, The International Journal of Nonlinear Sciences and Numerical Simulation (DOI: http://dx.doi.org/10.1515/ijnsns-2018-0023).

- OZDEMIR, I.B. **2018** A modified temperature-composition pdf method and its application to the simulation of a transitional bluff-body flame, Computers and Mathematics with Applications (DOI: http://dx.doi.org/10.1016/j.camwa.2017.12.031).

- OZDEMIR, I.B. & AKAR, F. **2017** Effects of composition and temperature of initial mixture on the formation and properties of polyurethane foam, Advances in Polymer Technology (DOI: http://dx.doi.org/10.1002/adv.21927).

- OZDEMIR, I.B. & PAHLAVANI, H. **2017** Effects of air vents on the flow of reacting polyurethane foam in a refrigerator cavity, Advances in Polymer Technology (DOI: http://dx.doi.org/10.1002/adv.21916).

- OZDEMIR, I.B. & AKAR, F. **2017** 3D simulation of polyurethane foam injection and reacting mold flow in a complex geometry, Heat and Mass Transfer (DOI: http://dx.doi.org/10.1007/s00231-017-2232-z).

- OZDEMIR, I.B. **2017** Use of computational combustion in the development and design of energy-efficient household cooker-top burners, Journal of Energy Resources Technology – ASME **139**, 022206.1022206-022206.8 (DOI: http://dx.doi.org/10.1115/1.4035256).

- OZDEMIR, I.B. **2017** Simulation of turbulent combustion in a self-aerated domestic gas oven, Applied Thermal Engineering **113**, 160–169 (DOI: http://dx.doi.org/10.1016/j.applthermaleng.2016.10.205).

- OZDEMIR, I.B., AKAR, F. & LIPPMANN, N. **2016** Parameter optimization of nitriding process using chemical kinetics, Metallurgical and Materials Transactions A **47A**, 1-4 (DOI: http://dx.doi.org/10.1007/s11661-016-3705-2).

- OZDEMIR, I.B. & Kantaş M. **2016** Investigation of partially-premixed combustion in a household cooker-top burner, Fuel Processing Technology **151,** 107–116 (DOI: http://dx.doi.org/10.1016/j.fuproc.2016.04.039).

- GUNGOR, E. & OZDEMIR, I.B. **2016** Simulation of oblique propeller flow including cavitation and pressure pulses, Underwater Technology **33**, 1–11 (DOI: http://dx.doi.org/10.3723/ut.33.203).

- GUNGOR, E. & OZDEMIR, I.B. **2015** Design and analyses of a propeller for underwater vehicles using computational fluid dynamics, Applied Mechanics and Materials, **798**, 155-159 (DOI: http://dx.doi.org/10.4028/www.scientific.net/AMM.798.155).

- OZDEMIR, I.B. & AKAR, F. **2015** The response of nitriding chemistry to different initial gas compositions, *Journal of Materials Engineering and Performance*, **24**, 3002-3007 (DOI http://dx.doi.org/10.1007/s11665-015-1585-z).

- OZDEMIR, I.B. & AKAR, F. **2015**. Local dynamics of chemical kinetics at different phases of nitriding process, *Journal of Materials Engineering and Performance*, **24**, 2984-2989 (DOI http://dx.doi.org/10.1007/s11665-015-1586-y).

- OZDEMIR, I.B. & AKAR, F. **2015** The effect of flow orientation on nitriding process, *Vacuum*, **116**, 104–109 (DOI: http://dx.doi.org/10.1016/j.vacuum.2015.03.004).

- HOXHA, A. & OZDEMIR, I. B. **2014** Simulation of a burner operating at mild combustion using ILDM chemistry, *Progress in Computational Fluid Dynamics,* **14**, 233-243 (DOI: http://dx.doi.org/10.1504/PCFD.2014.063861).

- OZDEMIR, I.B. & LIPPMANN, N. **2013** Modelling and simulation of surface reactions and reactive flow of a nitriding process, *Surface and Coatings Technology*, **219**, 151–162 (DOI: http://dx.doi.org/10.1016/j.surfcoat.2013.01.019).

- DOLEK, O., OZKAN, G. & OZDEMIR, I. B. **2004** Structures of flow around a full scale side mirror of a car with relevance to aerodynamic noise, Proc. Instn. Mech. Engrs. Part D: *Journal of Automobile Engineering*, **218,** 1085-1097 (DOI: http://dx.doi.org/10.1177/095440700421801003).

- KOZAKA, E. O., OZKAN, G. & OZDEMIR, I. B. **2004** Turbulent structure of three dimensional flow behind a model car. Part 1: Exposed to uniform approach flow, *Journal of Turbulence*, **5**, 002 (DOI: http://dx.doi.org/10.1088/1468-5248/5/1/002).

- OZDEMIR, E. & OZDEMIR, I. B. **2004** Turbulent structure of three dimensional flow behind a model car. Part 2: Exposed to crossflow, *Journal of Turbulence*, **5**, 003 (DOI: http://dx.doi.org/10.1088/1468-5248/5/1/003).

- OZDEMIR, I. B. & PETERS, N. **2001** Characteristics of the reaction zone in a combustor operating at mild combustion, *Experiments in Fluids*, **30**, 683-695 (DOI: http://dx.doi.org/10.1007/s003480000248).

- OZDEMIR, I. B. **2000** Use of the MILD combustion as a method to reduce NOx emissions (Alevsiz yanma teknolojisinin yanma sistemlerinde ortaya çıkan NOx emisyonlarının azaltılmasında bir yöntem olarak kullanılması), *Mühendis ve Makina*, MMO transactions, **41** (485), 21-26.

- OZDEMIR, I. B. **1997** Mixing mechanisms of vortex ring formed by gravity slumping motion, *Experiments in Fluids*, **22**, 271-280 (DOI: http://dx.doi.org/10.1007/s003480050048).

- OZDEMIR, I. B. **1996** Stability of the wall jet formed by the impingement of a single-phase jet, *Archives of Mechanics*, **48**, 641-658.

- OZDEMIR, I. B., WHITELAW, J. H. & BİÇEN, A. F. **1996** Flow properties and passive scalar transport in a model room with relevance to ventilation effectiveness, Proc. Instn. Mech. Engrs. Part C: Journal of Mechanical Engineering Science, **210**, 297-307 (DOI: http://dx.doi.org/10.1243/PIME_PROC_1996_210_202_02).

- OZDEMIR, I. B., WHITELAW, J. H. **1993** Impingement of an unsteady two-phase jet on unheated and heated flat plates, *Journal of Fluid Mechanics*, **252**, 499-523 (DOI: http://dx.doi.org/10.1017/s0022112093003854).

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Conference

- ATA A, OZDEMIR I.B. **2020** New concepts in gas burner design for reduced emissions, IV. International Conference on Fossil and Renewable Energy, Houston, TX, 17-19 February 2020, USA.

- OZDEMIR, I.B., PAHLAVANI, H. **2017** Formation of insulating polyurethane foam in a reacting mold flow, 3rd International Conference on Advances in Mechanical Engineering, 19–21 December 2017, İstanbul, Turkey.

- OZDEMIR, I.B., PAHLAVANI, H. **2017** On the interactions of surface reactions and multicomponent flow in a nitriding process, the International Porous and Powder Materials Symposium and Exhibitions, September 12-15, Kusadasi, Turkey.

- GUNGOR, E. & OZDEMIR, I.B. **2015** Investigation of performance of conventional propellers and design for unique propeller, 8th International Conference on Computational Heat and Mass Transfer, 25-28 May 2015, Istanbul, Turkey.

- OZDEMIR, I.B., AKAR, F. & LIPPMANN, N. **2014** Simulation of flow and reactions in a nitriding furnace, 5th Bodycote-AGA In-Depth Heat Treatment Seminar, 20-21 May 2014, Stockholm, Sweden.

- BEZCI, H. & OZDEMIR, I.B. **2010** Turbulence and noise characteristics of a radial fan, Internoise, June 13-16, Lisbon, Portugal.

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- DOLEK, O., ŞEN, B. A., KOZAKA, E. O., OZKAN, G. & OZDEMIR, I. B. **2002** Taşıtlarda yan ayna Akış özelliklerinin aerodinamik gürültü üzerine etkileri, Otomotiv Teknolojileri Kongresi, 24-26 Haziran 2002, Bursa, Turkey.

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- OZDEMIR, I. B. **1998** İTÜ'de Savunma Teknolojileri Programı Ayrıntıları (in Turkish), Topçu ve Hava Savunma Sempozyumu, 14-15 Mayıs, Polatlı - Ankara.

- UÇAK, M. & OZDEMIR, I. B. **1998** Supersonic jets exhausting into tubular confined spaces, Eighth International Symposium on Flow Visualisation, September 1-4, Sorrento, Italy.

- OZKAN, G. & OZDEMIR, I. B. **1998** Shock characteristics of supersonic two-phase free jets, Eighth International Symposium on Flow Visualisation, September 1-4, Sorrento, Italy.

- KAYIŞBUDAK, M. & OZDEMIR, I. B. **1998** Supersonic jet-wall interactions, Eighth International Symposium on Flow Visualisation, September 1-4, Sorrento, Italy.

- OZDEMIR, I. B. **1992** Correlation between the size characteristics of the wall jet and the dynamics of the unsteady film formed after the impingement of an unsteady two-phase jet, Sixth International Symposium on Applications of Laser Techniques to Fluid Mechanics, July 20-23, Lisbon, Portugal.

- HEWITT, H. C. & OZDEMIR, I. B. **1987** Heat pump and fan performance tests, ASME-JSME-JSES Solar Energy Conference, March 22-27, Honolulu, U.S.A.

6. PATENTS

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7. THESES

- Impingement of Single and Two-phase Jets on Unheated and Heated Flat Plates, 1992, Ph.D. thesis, Mechanical Engineering Dept., Imperial College, supervised by Prof. Dr. J. H. Whitelaw.

- The Dynamics of Unsteady Buoyancy-Driven Flow in the Early Stages of Heavy Gas Dispersion, 1988, VKI thesis, Environmental & Applied Fluid Mechanics Dept., von Karman Institute for Fluid Dynamics, supervised by Prof. D. Olivari.

- Study on Square-edged Rectangular Orifice Meters, 1987, M.Sc. thesis, Mechanical Engineering Dept., Tennessee Technological University, supervised by Prof. Dr. H. C. Hewitt.

- Optimisation of Gas Turbine Cycles for Aircraft Propulsion, 1985, B.Sc. thesis (with Mr. S. C. Gülen), Mechanical Engineering Dept., Boğaziçi University, supervised by Prof. Dr. A. R. Büyüktür.

8. MEMBERSHIPS

- Member of the **European Mechanics Society**
- Member, Wind Power Systems, **European Wind Energy Technology Platform**, 2007-2011
- National Contact Point for the **European Aeronautics Science Network** (EASN), 2008-2009

9. OTHER ACTIVITIES

- Reviewing papers for
  - ***Fuel***
  - ***Computers and Fluids***
  - ***Combustion Institute Symposiums***
  - ***Experiments in Fluids***
  - ***Flow, Turbulence and Combustion***
  - ***Heat and Mass Transfer***
  - ***Energy Conversion and Management***
  - ***Energy and Fuels***
  - ***The Aeronautical Journal***
  - ***International Journal for Numerical Methods in Fluids***
  - ***CFD Letters***
  - ***Engineering Applications of Computational Fluid Mechanics***
  - ***ASME ESDA Conferences.***
  - ***TURBO EXPO Conferences.***
  - ***EWEC, European Wind Energy Conference and Exhibition.***
  - ***SAE International Journal of Passenger Cars: Mechanical Systems.***
  - ***Journal of Materials Engineering and Performance***

- Frequently hosting scientists in sabbatical visits to Fluids Group
- Refereed Applications for Promotion to Professorship in Universities in the Gulf States
- Reviewed Project Proposals Submitted to Research Foundations in the Gulf States
- Organized the **ICCFD9, Istanbul**, a leading international conference devoted to all innovative aspects of CFD, 11-15 July 2016.
- Organized the Workshop **CDRF´04, *Chemical Kinetics and Diffusion Processes in Reactive Flows*, Istanbul, 7-9 June 2004**.