

## Prof. ABDULLAH ULAŞ

### Personal Information

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### Education Information

Doctorate, Pennsylvania State University, Makina Mühendisligi, United States Of America 1996 - 2000

Postgraduate, Pennsylvania State University, Makina Mühendisligi, United States Of America 1994 - 1996

Undergraduate, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, Turkey 1990 - 1994

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2012 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2007 - 2012

Assistant Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2002 - 2007

Lecturer PhD, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2001 - 2002

### Advising Theses

ULAŞ A., ANALYSIS OF SLOSH DAMPING IN LIQUID ROCKET ENGINE PROPELLANT TANK, Postgraduate, D.BERRAK(Student), 2021

ULAŞ A., Design of a test setup for altitude simulation, Postgraduate, A.Aydoğdu(Student), 2019

ULAŞ A., Burning rate comparison of a mathematical model with experimental results for AP/HTPB/Iron oxide based composite propellants, Postgraduate, S.Cem.(Student), 2019

ULAŞ A., Investigation of the effect of geometrical parameters of pressure swirl atomizer on the hollow cone spray, Postgraduate, T.Tokgöz(Student), 2019

ULAŞ A., Experimental and numerical investigation of an augmented spark igniter and evaluation of igniter's effective flame length as a performance parameter, Postgraduate, L.Çağatay(Student), 2019

ULAŞ A., Optimization of air to air cross flow heat exchanger, Postgraduate, İ.ÇAĞATAY(Student), 2018

ULAŞ A., Design and Ground Testing of a Liquid Bi-Propellant Thruster, Postgraduate, Ç.YILMAZ(Student), 2017

ULAŞ A., Experimental and numerical study of detonation in a closed chamber, Postgraduate, T.İNCEKÜRK(Student), 2016

ULAŞ A., AN EXPERIMENTAL STUDY ON THE IGNITION AND COMBUSTION OF PYROTECHNIC COMPOSITIONS, Doctorate, S.KOÇ(Student), 2015

ULAŞ A., Design and development of a cylinder expansion test setup for determination of equation of state parameters of various explosives, Postgraduate, E.TOPKARAOĞLU(Student), 2014

ULAŞ A., Design and analysis of a high voltage exploding foil initiator for missile systems, Postgraduate, M.YUSUF(Student), 2013

Kurtuluş D. F., Ulaş A., The effect of Geometric Design Parameters on the Flow Behavior of a Dual Pulse Solid Rocket Motor During Secondary Firing , Postgraduate, S.Erdem(Student), 2012

ULAŞ A., Drop test simulation of a munition with foams and parametric study on foam geometry and material,

Postgraduate, B.GERÇEKER(Student), 2012  
ULAŞ A., Analysis of internal explosion and structural response to blast loading, Postgraduate, U.CAN(Student), 2012  
KURTULUŞ D. F., ULAŞ A., The Effects of geometric design parameters on the flow behavior of a dual pulse solid rocket motor during secondary firing, Postgraduate, S.Erdem(Student), 2012  
ULAŞ A., Design and validation of a combustion test rig for airbreathing rocket propulsion studies, Postgraduate, E.SONGÜR(Student), 2010  
ÖZYÖRÜK Y., ULAŞ A., One and two dimensional numerical simulation of deflagration to detonation transition phenomenon in solid energetic materials, Doctorate, B.NARİN(Student), 2010  
ULAŞ A., An accelerated aerodynamic optimization approach for a small turbojet engine centrifugal compressor, Postgraduate, A.CEYLANOĞLU(Student), 2009  
ULAŞ A., Design analysis and performance testing of a jet vane, Postgraduate, İ.KAYA(Student), 2009  
ULAŞ A., BALLISTIC PERFORMANCE ANALYSIS OF MODERN BASE BLEED ARTILLERY PROJECTILES, Postgraduate, A.ÖKSÜZ(Student), 2009  
ULAŞ A., Analysis of regenerative cooling in liquid propellant rocket engines, Postgraduate, M.EMRE(Student), 2008  
ULAŞ A., STUDY OF IGNITION CHARACTERISTICS OF A PLASTIC BONDED EXPLOSIVE, Postgraduate, E.AYDEMİR(Student), 2008  
ULAŞ A., Steady-state modeling of detonation phenomenon in premixed gaseous mixtures and energetic solid explosives, Postgraduate, F.CENGİZ(Student), 2007  
ULAŞ A., Design od a connected pipe test facility for ramjet applications, Postgraduate, M.Nevzat(Student), 2005  
ULAŞ A., Design of a connected pipe test facility for ramjet applications, Postgraduate, M.NEVZAT(Student), 2005  
ULAŞ A., Experimental study of solid propellant combustion instability, Postgraduate, A.ÇEKİÇ(Student), 2005  
ULAŞ A., Analysis of 3-D grain burnback of solid propellant rocket motors and verification with rocket motor tests, Postgraduate, G.PÜSKÜLCÜ(Student), 2004

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

- I. **Improved combustion model of boron particles for ducted rocket combustion chambers**  
Kalpaklı B., Acar E. B., ULAŞ A.  
COMBUSTION AND FLAME, vol.179, pp.267-279, 2017 (SCI-Expanded)
- II. **Characterization of BPN Pyrotechnic Composition Containing Micro- and Nanometer-Sized Boron Particles**  
Koc S., ULAŞ A., Yılmaz N. E.  
PROPELLANTS EXPLOSIVES PYROTECHNICS, vol.40, no.5, pp.735-742, 2015 (SCI-Expanded)
- III. **Two dimensional numerical prediction of deflagration-to-detonation transition in porous energetic materials**  
Narin B., ÖZYÖRÜK Y., ULAŞ A.  
JOURNAL OF HAZARDOUS MATERIALS, vol.273, pp.44-52, 2014 (SCI-Expanded)
- IV. **Numerical analysis of regenerative cooling in liquid propellant rocket engines**  
ULAŞ A., Boysan E.  
AEROSPACE SCIENCE AND TECHNOLOGY, vol.24, no.1, pp.187-197, 2013 (SCI-Expanded)
- V. **Calculation of Detonation Properties of Gaseous Explosives Using Generalized Reduced Gradient Nonlinear Optimization**  
ULAŞ A., Cengiz F.  
PROPELLANTS EXPLOSIVES PYROTECHNICS, vol.36, no.4, pp.314-319, 2011 (SCI-Expanded)
- VI. **A numerical study on the thermal initiation of a confined explosive in 2-D geometry**  
Aydemir E., ULAŞ A.  
JOURNAL OF HAZARDOUS MATERIALS, vol.186, no.1, pp.396-400, 2011 (SCI-Expanded)
- VII. **An experimental study on the hypergolic ignition of hydrogen peroxide and ethanolamine**  
Ak M. A., ULAŞ A., Sumer B., Yazici B., Yildirim C., Gonc L. O., Orhan F. E.  
FUEL, vol.90, no.1, pp.395-398, 2011 (SCI-Expanded)

- VIII. **Numerical prediction of steady-state detonation properties of condensed-phase explosives**  
Cengiz F., ULAŞ A.  
JOURNAL OF HAZARDOUS MATERIALS, vol.172, pp.1646-1651, 2009 (SCI-Expanded)
- IX. **3-D grain burnback analysis of solid propellant rocket motors: Part 1-ballistic motor tests**  
Puskulcu G., ULAŞ A.  
AEROSPACE SCIENCE AND TECHNOLOGY, vol.12, no.8, pp.579-584, 2008 (SCI-Expanded)
- X. **3-D grain burnback analysis of solid propellant rocket motors: Part 2-modeling and simulations**  
Puskulcu G., ULAŞ A.  
AEROSPACE SCIENCE AND TECHNOLOGY, vol.12, no.8, pp.585-591, 2008 (SCI-Expanded)
- XI. **Laser-induced ignition of solid propellants for gas generators**  
ULAŞ A., Kuo K. K.  
FUEL, vol.87, no.6, pp.639-646, 2008 (SCI-Expanded)
- XII. **An investigation of the performance of a boron/potassium-nitrate based pyrotechnic igniter**  
Ulas A., Risha G. A., Kuo K. K.  
PROPELLANTS EXPLOSIVES PYROTECHNICS, vol.31, no.4, pp.311-317, 2006 (SCI-Expanded)

### **Refereed Congress / Symposium Publications in Proceedings**

- I. **Design Methodology for a Central Injection Type Supersonic Air Ejector and Diffuser System for Altitude Simulation**  
aydoğdu a., sümer b., yazıcı b., ULAŞ A.  
AIAA Propulsion and Energy 2019 Forum, Indianapolis, United States Of America, 19 - 22 August 2019
- II. **Investigation of the Effect of Geometrical Parameters of Pressure Swirl Atomizer on the Hollow Cone Spray**  
tokgöz t., sümer b., ULAŞ A.  
AIAA Propulsion and Energy 2019 Forum, Indianapolis, United States Of America, 19 - 22 August 2019
- III. **Evaluation of an Augmented Spark Igniter's Flame Length and Comparison of Numerical and Experimental Investigations**  
Öz L., Özer A. C., Sümer B., ULAŞ A.  
AIAA Propulsion and Energy 2019 Forum, Indianapolis, United States Of America, 19 - 22 August 2019
- IV. **Burning Rate Comparison of a Mathematical Model with Experimental Results for AP/HTPB Based Composite Propellants**  
Özcan S., cürdaneli s., ULAŞ A.  
2018 AIAA Propulsion and Energy Forum, Cincinnati, United States Of America, 9 - 11 July 2018
- V. **Ballistic Performance of BPN Igniter Compositions Containing Micron and Nano-Sized Boron Particles**  
Koç S., Eroğul Kombe F., ULAŞ A.  
53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, United States Of America, 10 - 12 July 2017
- VI. **Design and Testing of a Green Bipropellant Thruster for Satellite Propulsion**  
Yılmaz Ç., Bayramoğlu M., Göçmen M., ULAŞ A.  
53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, United States Of America, 10 - 12 July 2017
- VII. **A Test Bench for Gas Turbine Combustor Cooling Investigations**  
inanlı s., YASA T., ULAŞ A.  
12th international conference on heat transfer fluid mechanics and thermodynamics, 11 - 13 July 2016
- VIII. **Experimental Investigation of Effusion and Film Cooling for Gas Turbine Combustor**  
inanlı s., YASA T., ULAŞ A.  
12th international conference on heat transfer fluid mechanics and thermodynamics, 11 - 13 July 2016
- IX. **Comparison of BPN Igniter Compositions Containing Micron and Nano Sized Boron Particles**  
Koç S., ULAŞ A.  
51st AIAA/SAE/ASEE Joint Propulsion Conference, 27 - 29 July 2015

- X. **Application of parallel processing to numerical modeling of two-phase deflagration-to-detonation (DDT) phenomenon**  
Bekir B., ÖZYÖRÜK Y., ULAŞ A.  
Parallel Computational Fluid Dynamics, Parallel CFD 2007, Antalya, Turkey, 21 - 24 May 2007, pp.123-130
- XI. **1 D two phase modeling of deflagration to detonation transition DDT phenomenon in porous energetic materials**  
NARİN B., ÖZYÖRÜK Y., ULAŞ A.  
AIAC'2007 Ankara International Aerospace Conference, Ankara, Turkey, 10 - 12 September 2007
- XII. **Comparison of different aspect ratio cooling channel designs for a liquid propellant rocket engine**  
Boysan M. E., ULAŞ A., Toker K. A., Seckin B.  
3rd International Conference on Recent Advances in Space Technologies, İstanbul, Turkey, 14 - 16 June 2007, pp.225-226
- XIII. **Experimental analysis on the measurement of ballistic properties of solid propellants**  
Cuerdaneli S., Ak M. A., ULAŞ A.  
3rd International Conference on Recent Advances in Space Technologies, İstanbul, Turkey, 14 - 16 June 2007, pp.231-232
- XIV. **Development of one dimensional solver for two phase reactive deflagration to detonation transition phenomenon in porous energetic materials**  
NARİN B., ÖZYÖRÜK Y., ULAŞ A.  
AIAC'2005 Ankara International Aerospace Conference, Ankara, Turkey, 22 - 25 August 2005
- XV. **EFFECTS OF FLUORINE-CONTAINING SPECIES ON THE IGNITION AND COMBUSTION OF BORON PARTICLES: EXPERIMENT AND THEORY**  
ULAŞ A., Kuo K. K., Gotzmer C.  
The Fifth International Symposium on Special Topics in Chemical Propulsion, stresa, Italy, 18 - 22 June 2000, pp.453-463
- XVI. **Combustion of HTPB-based solid fuels containing nano-sized energetic powder in a hybrid rocket motor**  
Risha G., ULAŞ A., Boyer E., Kumar S., Kuo K. K.  
37th Joint Propulsion Conference and Exhibit, Salt Lake City, UT, U.S.A., 8 - 11 July 2001

## Metrics

Publication: 28

Citation (WoS): 191

Citation (Scopus): 176

H-Index (WoS): 9

H-Index (Scopus): 8

## Non Academic Experience

METU

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TÜBİTAK-SAGE

METU

Combustion Propulsion and Ballistic Technology Corp.

The Pennsylvania State University

The Pennsylvania State University