

## Asst. Prof. FERHAT KOCA

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: ABD-7984-2021

ScopusID: 57263485000

Yoksis Researcher ID: 139217

### Education Information

Doctorate, Sivas Cumhuriyet University, Mühendislik Fakültesi, Makine Mühendisliği, Turkey  
2016 - 2020

Postgraduate, Sakarya University, Faculty Of Engineering, Department Of Mechanical  
Engineering, Turkey 2012 - 2015

Undergraduate, VSB - Technical University of Ostrava, Faculty of Mechanical Engineering,  
Department Of Mechanical Engineering, Czech Republic 2010 - 2011

Undergraduate, Sakarya University, Faculty Of Engineering, Department Of Mechanical  
Engineering, Turkey 2007 - 2011

### Biography

Dr. Ferhat Koca was born in Sivas in 1989. He completed his primary, secondary and high school education in Sivas. He received his bachelor's degree in mechanical engineering from Sakarya University, his master's degree in energy again from Sakarya University, and his doctorate in energy from Sivas Cumhuriyet University. Working as an R&D and production engineer in his field between 2011-2014, Koca started his academic career as a research assistant at Sivas Cumhuriyet University in 2014. He has been involved in academic activities at various universities and has taken part in joint projects at Çukurova University, Osmaniye Korkut Ata University and Sakarya University. He worked as a researcher in 4 projects in total. Ferhat Koca, who has around 40 published scientific works, is interested in energy, fluid mechanics, heat transfer, heating and cooling systems, computational fluid mechanics (CFD), design, analysis and simulation, nanofluids, particle imaging technique (PIV), optimization, aerodynamics.

### Dissertations

Doctorate, Investigation of the effect of different geometric structures on cylinder on flow structure, Sivas Cumhuriyet University, Mühendislik Fakültesi, Makine Mühendisliği, 2020

Postgraduate, Design and optimization of a cooling centrifugal pump impeller of tractor engine with using cfd, Sakarya University, Institute Of Science, 2015

## Research Areas

Mechanical Engineering, Energy, Fluid Mechanics, Thermodynamics, Heat and Mass Transfer, Heating, Refrigerating and Air Conditioning, Computational fluid dynamics, Engineering and Technology

## Academic Titles / Tasks

Assistant Professor, Sivas Cumhuriyet University, Teknoloji Fakültesi, Mekatronik Mühendisliği Bölümü, 2022 - Continues  
Research Assistant PhD, Sivas Cumhuriyet University, Teknoloji Fakültesi, İmalat Mühendisliği Bölümü, 2021 - 2022  
Research Assistant PhD, Sivas Cumhuriyet University, Teknoloji Fakültesi, Otomotiv Mühendisliği Bölümü, 2020 - 2021  
Research Assistant, Sivas Cumhuriyet University, Teknoloji Fakültesi, Otomotiv Mühendisliği Bölümü, 2014 - 2020

## Academic and Administrative Experience

Head of Department, Sivas Cumhuriyet University, Teknoloji Fakültesi, Mekatronik Mühendisliği Bölümü, 2024 - Continues  
Head of Department, Sivas Cumhuriyet University, Teknoloji Fakültesi, Mekatronik Mühendisliği Bölümü, 2022 - Continues

## Courses

Computational Fluid Dynamics, Postgraduate, 2022 - 2023  
Aerodynamic Factors and Analysis in Aircraft, Postgraduate, 2022 - 2023  
Fluid Mechanics, Undergraduate, 2022 - 2023  
Final Project, Undergraduate, 2022 - 2023  
Hydraulic and Pneumatic Systems, Undergraduate, 2022 - 2023  
Teamwork, Undergraduate, 2022 - 2023  
Materials, Undergraduate, 2022 - 2023  
Machine Elements II, Undergraduate, 2021 - 2022  
Strength of Materials, Undergraduate, 2021 - 2022  
Thermodynamics II, Undergraduate, 2021 - 2022  
Engine Renovation, Undergraduate, 2022 - 2023  
Occupational Health and Safety, Undergraduate, 2022 - 2023  
Graduation project, Undergraduate, 2022 - 2023  
Professional English - I, Undergraduate, 2021 - 2022  
Computer Aided Drawing-II, Undergraduate, 2021 - 2022  
Engine Reconditioning, Undergraduate, 2021 - 2022  
Business English-I , Undergraduate, 2020 - 2021  
Engine Renewal , Undergraduate, 2020 - 2021  
Occupational Health and Safety, Undergraduate, 2019 - 2020  
Strength, Undergraduate, 2019 - 2020

## Advising Theses

Koca F., Can İ., Gaz türbinlerinde soğutmalı türbin kanadının had ile optimum tasarımı ve analizi, Postgraduate, E.YILDIZ(Student), 2023  
Alnak D. E., KOCA F., Farklı Geometrilerdeki Mikro Kanatçık Isı Emicili Anakart İşlemci Modelinin Soğutulmasının Sayısal Analizi, Postgraduate, T.BURAK(Student), 2021

## Jury Memberships

Post Graduate, Post Graduate, Düzce Üniversitesi, October, 2022

Post Graduate, Post Graduate, Düzce Üniversitesi, October, 2022

Post Graduate, Post Graduate, Sivas Cumhuriyet Üniversitesi, July, 2022

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

- I. **Experimental and Numerical Investigation of the Control of the Flow Structure on Surface Modified Airfoils**  
Öztürk A., Çoban M., Koca F.  
Journal of Applied Fluid Mechanics, vol.16, no.12, pp.2381-2395, 2023 (SCI-Expanded)
- II. **Numerical investigation of CPU cooling with micro-pin-fin heat sink in different shapes**  
KOCA F., Güder T. B.  
European Physical Journal Plus, vol.137, no.11, 2022 (SCI-Expanded)
- III. **Experimental Investigation of the Effect of a Semi-Circular Spiral Protrusion on the Turbulent Flow Past a Cylinder**  
Koca F., Öztürk A.  
FLUID DYNAMICS, vol.57, no.3, pp.371-386, 2022 (SCI-Expanded)
- IV. **Numerical Investigation of Corrugated Channel with Backward-Facing Step in Terms of Fluid Flow and Heat Transfer**  
Koca F.  
Journal Of Engineering Thermophysics, vol.31, no.1, pp.187-199, 2022 (SCI-Expanded)
- V. **The effect of outlet location on heat transfer performance in micro pin-fin cooling used for a CPU**  
KOCA F., Zabun M.  
European Physical Journal Plus, vol.136, no.11, 2021 (SCI-Expanded)
- VI. **A Numerical Investigation of Heat Transfer from Heated Surfaces of Different Shapes**  
ALNAK D. E., KOCA F., ALNAK Y.  
JOURNAL OF ENGINEERING THERMOPHYSICS, vol.30, no.3, pp.494-507, 2021 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Numerical Investigation of the Effects of Rectangular Obstacles on the ThermalHydraulic Properties of a Circular Corrugated Channel**  
Koca F., Gürlek C.  
Çukurova Üniversitesi Mühendislik Fakültesi dergisi, vol.38, no.3, pp.661-670, 2023 (Peer-Reviewed Journal)
- II. **Numerical Investigation of Flow and Heat Transfer Characteristics in a Corrugated Channel Equipped With Obstacles**  
Gürlek C., Koca F.  
Sivas Cumhuriyet University Journal of Science and Technology, vol.2, no.1, pp.44-49, 2023 (Peer-Reviewed Journal)
- III. **The Effects of Nozzle Distance on Impinging Jet Heat Transfer and Fluid Flow**  
Koca F., Zabun M.  
Osmaniye Korkut Ata Üniversitesi Fen Bilimleri Enstitüsü Dergisi (Online), vol.5, no.2, pp.1008-1021, 2022 (Peer-Reviewed Journal)
- IV. **Numerical Investigation of The Effect of Impeller Blade Angle for Stirred Tank**  
ALNAK D. E., KOCA F., ALNAK Y.  
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.26, no.2, pp.397-409, 2022 (Peer-Reviewed Journal)
- V. **Numerical Investigation of Water Sloshing in Square Tank with Multiple Baffles**

Koca F., Zabun M.

Avrupa Bilim ve Teknoloji Dergisi, no.28, pp.1062-1070, 2021 (Peer-Reviewed Journal)

- VI. **The Effect of Semi-Circular Protrusions on Cylinder to Flow Structure**  
KOCA F., ÖZTÜRK A.  
CUMHURİYET SCIENCE JOURNAL, vol.40, no.3, pp.732-741, 2019 (Peer-Reviewed Journal)
- VII. **Investigation of Heat Transfer from Heated Square Patterned Surfaces in a Rectangular Channel with an Air Jet Impingement**  
ALNAK D. E., KARABULUT K., KOCA F.  
European Journal of Engineering and Natural Sciences, vol.3, no.1, pp.78-86, 2019 (Peer-Reviewed Journal)
- VIII. **Benzinli Bir Motorda Isıtılmış Biyoetanölün İkincil Yakıt Olarak Kullanımının İncelenmesi**  
YÜKSEL T., TEMİZER İ., CAN İ., KOCA F.  
Fırat Üniversitesi Mühendislik Bilimleri Dergisi, vol.31, no.1, pp.67-77, 2019 (Peer-Reviewed Journal)
- IX. **Study of the Effects of Location Angles for Semi Spheres on the Heat Transfer and Flow Structure in Converging-Diverging Channels**  
KARABULUT K., ALNAK D. E., KOCA F.  
EJONS International Journal on Mathematic, Engineering and Natural Sciences, vol.7, no.3, pp.1-15, 2019 (Peer-Reviewed Journal)
- X. **Daralan ve Genişleyen Bir Kanal İçerisine Yerleştirilen Yarım Küreler Üzerinden Akış ve Isı Transferinin Sayısal Olarak Araştırılması**  
ALNAK D. E., KARABULUT K., KOCA F.  
Çukurova Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi, vol.33, no.4, pp.225-240, 2018 (Peer-Reviewed Journal)
- XI. **Numerical Analysis of Flow and Heat Transfer for Semi Spheres Placed As Multiple Serials In a Channel**  
KARABULUT K., ALNAK D. E., KOCA F., ÖZALP C.  
European Mechanical Science, vol.2, no.3, pp.76-82, 2018 (Peer-Reviewed Journal)

## Books & Book Chapters

- I. **DESENLİ YÜZEYLERDE HAVA JETİ AKIŞI İÇİN TAŞINIM ISI TRANSFERİ VE AKIŞ ÖZELLİKLERİNİN İNCELENMESİ**  
ALNAK D. E., KARABULUT K., KOCA F.  
in: GELECEĞİN DÜNYASINDA BİLİMSEL VE MESLEKİ ÇALIŞMALAR-MÜHENDİSLİK VE TEKNOLOJİ, Dr. Ertuğrul ÇAM-Dr. Necaatin BARIŞÇI-Dr. Murat LÜY-Dr. Munise Didem DEMİR-Dr. Mehmet GÜÇYETMEZ-Dr. Özlem TOPRAK, Editor, Ekin Basım Yayın Dağıtım, Bursa, pp.191-217, 2018

## Refereed Congress / Symposium Publications in Proceedings

- I. **Thermo-Hydraulic Performance Analysis of an Air Heater with Different Types of Ribs Placed on the Absorber Plate**  
Koca F.  
3rd International Conference on Applied Engineering and Natural Sciences ICAENS 2022, Konya, Turkey, 20 - 23 July 2022, pp.2380-2386
- II. **Effect of Heat Sink Inlet/Outlet Section Angle on Heat Transfer Performance**  
Koca F.  
INTERNATIONAL CAPPADOCIA SCIENTIFIC RESEARCH CONGRESS, Nevşehir, Turkey, 15 - 17 December 2021, pp.203-2011
- III. **Effect Of Fin Structure Used in Heat Sink On Heat Transfer Performance**  
Koca F., Zabun M.

ISTANBUL INTERNATIONAL MODERN SCIENTIFIC RESEARCH CONGRESS –II, İstanbul, Turkey, 23 - 25 December 2021, pp.246-259

- IV. **Numerical Investigation of Water Sloshing in Square Tank with Multiple Baffles**  
Koca F.  
1 ST INTERNATIONAL CONFERENCE ON APPLIED ENGINEERING AND NATURAL SCIENCES, Konya, Turkey, 1 - 03 November 2021, pp.226
- V. **Flow Analysis on Cylinder Geometries Designed with Different Spiral Steps**  
KOCA F., ÖZTÜRK A., ALNAK D. E., GÜRLEK C.  
Third International Mediterranean Congress on Natural Sciences, Health Sciences and Engineering (MENSEC III), Podgorica, Serbia And Montenegro, 18 - 20 June 2019
- VI. **Experimental Flow Analysis on Cylinder Geometries with Using Particle Image Velocimetry**  
KOCA F., ÖZTÜRK A.  
Third International Mediterranean Congress on Natural Sciences, Health Sciences and Engineering (MENSEC III), Podgorica, Serbia And Montenegro, 18 - 20 June 2019
- VII. **Investigation of the Heat Transfer and Flow Characteristic According to Placement Angles of Semi Spheres In Converging-Diverging Channels**  
KARABULUT K., ALNAK D. E., KOCA F.  
1. International Technological Sciences and Design Symposium-ITESDES 2018, Giresun, Turkey, 27 - 29 June 2018, pp.1119-1136
- VIII. **Desenli Yüzeylerde Hava Jeti Akışı için Taşınım Isı Transferi ve Akış Özelliklerinin İncelenmesi**  
ALNAK D. E., KARABULUT K., KOCA F.  
II. International and Scientific and Vocational Studies-Engineering and National Sciences-BILMES 2018, Nevşehir, Turkey, 5 - 08 July 2018, pp.845-868
- IX. **Analysis of Cooling of the Heated Circle Patterned Surfaces by Using an Air Jet Impingement**  
KARABULUT K., ALNAK D. E., KOCA F.  
ICENS 4th International Conference on Engineering and Natural Science, Kiev, Ukraine, 2 - 06 May 2018, pp.411-420
- X. **Investigation of Heat Transfer from Heated Square Patterned Surfaces in a Rectangular Channel with an Air Jet Impingement**  
ALNAK D. E., KARABULUT K., KOCA F.  
ICENS 4th International Conference On Engineering and Natural Science, Kiev, Ukraine, 2 - 06 May 2018, pp.367-376
- XI. **Study of the Effects of Location Angles for Semi Spheres on the Heat Transfer and Flow Structure in Converging-Diverging Channels**  
KARABULUT K., ALNAK D. E., KOCA F.  
EJONS International Congress on Mathematic, Engineering and Natural Sciences-III, Mardin, Turkey, 21 - 22 April 2018
- XII. **Numerical Investigation of Flow and Heat Transfer on Semi Sphere in a Channel**  
ALNAK D. E., KOCA F., KARABULUT K., SÖYLER M., ÖZALP C.  
International Advanced Researches Engineering Congress-2017, 16 - 18 November 2017, pp.636-643
- XIII. **Kanal İçerisine Yerleştirilen Yarım Küre Üzerindeki Akış ve Isı Transferinin Sayısal Olarak İncelenmesi**  
ALNAK D. E., KOCA F., KARABULUT K., SÖYLER M., ÖZALP C.  
IAREC'17 International Advanced Researches Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017, pp.635-643
- XIV. **Experimental Investigation of Dual Fuel Usage in a Gasoline Engine**  
YÜKSEL T., TEMİZER İ., CAN İ., KOCA F.  
8th International Advanced Technologies Symposium, Elazığ, Turkey, 19 - 22 October 2017, pp.2355-2362
- XV. **Numerical Investigation of Flow and Heat Transfer on Half Spheres in a Channel**  
ALNAK D. E., KOCA F., KARABULUT K.  
IATS 17 8th International Advanced Technologies Symposium, Elazığ, Turkey, 19 - 22 October 2017, vol.8, pp.1697-

- XVI. **Numerical Investigation of Varying Temperature Values Depending on Height of Photovoltaic Modules**  
KAPICIOĞLU A., ESEN H., KARABULUT K., KOCA F.  
8th International Advanced Technologies Symposium, Elazığ, Turkey, 19 - 22 October 2017, vol.11, pp.2293-2299
- XVII. **Kanal İçerisine Çoklu Diziler Halinde Yerleştirilen YarımKüreler için Akış ve Isı Transferinin Sayısal Olarak İncelenmesi**  
KARABULUT K., ALNAK D. E., KOCA F., ÖZALP C.  
2nd International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017
- XVIII. **Numerical Analysis of Cooling of Squared Blocks by an Impinging Flow Jet**  
ALNAK D. E., ÖZALP C., HÜRDOĞAN E., KOCA F., SÖYLER M.  
5th INTERNATIONAL CONFERENCE SUSTAINABLE POSTHARVEST AND FOOD TECHNOLOGIES, 23 - 28 April 2017
- XIX. **TURBO ŞARJ ARA SOĞUTUCUNUN OPTIMUM GEOMETRİ ÇALIŞMASI VE CFD ANALİZLERİ**  
CAN İ., KOCA F., ÖZDEMİR E.  
IMSEC2016, 26 - 28 October 2016
- XX. **Numerical Investigation of flowstructure and tempatrature distribution of cavities with different shapes**  
ÖZALP C., ALNAK D. E., YANIKTEPE B., KOCA F.  
1. Internatonal Conferances on Engineering Technology and Applied Sciences, Afyon, Turkey, 21 - 22 April 2016
- XXI. **Numerical investigation of flow structure and temperature distribution of cavities with different shapes**  
ÖZALP C., YANIKTEPE B., ALNAK D. E., KOCA F.  
ICETAS2016, 21 - 22 April 2016
- XXII. **Yarım silindir yerleştirilmiş kavite içerisinde doğal taşınımlı ısı geçişinin sayısal olarak incelenmesi**  
ALNAK D. E., ÖZALP C., KOCA F.  
20. Ulusal Isı Bilimi ve Tekniği Kongresi, Turkey, 2 - 05 September 2015

## Supported Projects

Koca F., Öztürk A., Project Supported by Higher Education Institutions, Investigation of the Effect of Different Geometric Structures on the Flow Structure on the Cylinder, 2018 - 2020

Koca F., Alnak D. E., Karabulut K., Project Supported by Higher Education Institutions, NUMERICAL INVESTIGATION OF FLOW AND HEAT TRANSFER CHARACTERISTICS IN VARIOUS GEOMETRIES USING IMPACT JET FLOW, 2018 - 2019

Koca F., Alnak D. E., Karabulut K., Project Supported by Higher Education Institutions, Numerical Study of the Effects of Location Angles for Semi Spheres on the Heat Transfer and Flow Structure in Converging-Diverging Channels, 2016 - 2017

Yüksel T., Temizer İ., Can İ., Koca F., Project Supported by Higher Education Institutions, Investigation of the Use Bioethanol as a Secondary Fuel in Gasoline Engines with Advanced Combustion Analysis Program, 2015 - 2017

## Activities in Scientific Journals

Sivas Cumhuriyet University Journal of Science and Technology (CUJAST), Editor, 2022 - Continues

## Scientific Refereeing

International Journal of Automotive Engineering and Technologies, National Scientific Refreed Journal, September 2022  
Applied Science and Engineering Progress, Other Indexed Journal, August 2022

PHYSICS OF FLUIDS, SCI Journal, July 2022

OCEAN ENGINEERING, SCI Journal, June 2022

INTERNATIONAL JOURNAL OF AUTOMOTIVE SCIENCE AND TECHNOLOGY, National Scientific Refreed Journal, May 2022

TEHNICKI VJESNIK-TECHNICAL GAZETTE, SCI Journal, April 2022

INTERNATIONAL JOURNAL OF INNOVATIVE ENGINEERING APPLICATIONS, National Scientific Refreed Journal, March 2022

JOURNAL OF THE BRAZILIAN SOCIETY OF MECHANICAL SCIENCES AND ENGINEERING, SCI Journal, January 2022

OCEAN ENGINEERING, SCI Journal, December 2021

FUEL, Journal Indexed in SCI-E, February 2020

## **Scientific Consultations**

Cmc Refrigeration İklimlendirme İmalat İhracat İthalat Sanayi ve Ticaret Limited Şirketi, Scientific Consultancy, Sivas Cumhuriyet University, Teknoloji Fakültesi, İmalat Mühendisliği Bölümü, Turkey, 2022 - 2023

## **Metrics**

Publication: 40

Citation (WoS): 11

Citation (Scopus): 11

H-Index (WoS): 5

H-Index (Scopus): 5

## **Awards**

Koca F., Alnak D. E., Karabulut K., Best Paper Award, Imsec, October 2017