

Short bio:

Emre Cenker works at Saudi Aramco Research and Development Center as a scientist. He has a B.Sc. in Mechanical Engineering from Koc University, a M.Sc. in Automotive Engineering from RWTH Aachen and a Ph.D. summa cum laude from University of Duisburg-Essen and Ecole Centrale Paris. Following his studies, Emre had postdoctoral research experiences for over four years at KAUST and Sandia National Laboratories. He became a faculty member at the University of Birmingham shortly before joining Saudi Aramco. He participated in organizing committees of engine combustion network (ECN), spray combustion consortium, and international laser-induced incandescence workshops. Emre has six years of institutional experience in ministerial and official outreach programs of Group of Twenty (G20).

EMRE CENKER

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Summary:

A science expert in sustainable mobility, energy and climate domain with fourteen years' international research, academia and industry experience. I have a PhD in mechanical engineering and 5000+ hours of team leading and project management experience during which I excelled myself in test rig designing and building, safety compliance, contracting, procurement, grant writing and administration. I have strong competencies in the following research fields:

1. Laser based optical diagnostics in reactive flows and carbon nanoparticles
2. Heat transfer, thermodynamics, fluid mechanics, and automotive engineering
3. Data science, image processing and computer programming

I participated in organizing committees of several international events, including engine combustion network (ECN), spray combustion consortium (SCC), and laser-induced incandescence (LII) workshops. I have six years of institutional experience in ministerial and official outreach programs of Group of Twenty (G20).

Education:

2010 – 2014 **École Centrale Paris, Paris**
Universität Duisburg-Essen, Duisburg (*jointly supervised*)
Ph.D. Laser diagnostics in reactive flows and carbon nanoparticles – *Summa cum laude*

2007 – 2009 **RWTH, Aachen**
M.Sc. Automotive Engineering – *Full DAAD scholarship*

2002 – 2007 **Koç University, Istanbul**
B.Sc. Mechanical Engineering – *Full merit scholarship, Dean's honor roll*

Experience:

2018 – ongoing **Scientist, Saudi Aramco, Saudi Arabia**
Transport Technologies / Research and Development

- Project management: Fuel combustion for advanced engines (FUELCOM)
- Technical supervising of doctoral students at academic partners
- Theme leader for development of Turbulent Jet Ignition (TJI)
- Vehicle systems simulations
- G20 task force: Climate stewardship working group of G20 2020
- Assoc. secretary to the projects steering committee

2018 – 2019 **Lecturer (Asst. Professor), University of Birmingham, UK**
Department of Mechanical Engineering

- Principal Investigator: Optical Diagnostics in Combustion Lab (ODAC LAB)
- Spray diagnostics research for transport applications
- Lecturing *turbomachinery and compressible flows* for 3rd year mech. eng.

2017 – 2018 **Postdoctoral Appointee, Sandia National Laboratories, USA**
Combustion Research Facility

- Laboratory experiments with high-pressure and high-temperature setups
- In-nozzle fuel flow imaging with long-distance microscopy
- Cavitation analysis and solubility of gases in hydrocarbons
- Pyrolysis of fuel at high temperature
- Helium ion microscopy

2014 – 2017 **Postdoctoral Research Fellow, KAUST, Saudi Arabia**
Clean Combustion Research Center

- Team leader in experimental soot research

- Laser-induced incandescence (LII) modeling and software development
 - Laser-induced exciplex fluorescence (LIEF)
 - Phase Doppler anemometry (PDA)
 - Field supervising of three PhD students
 - Substitute lecturer for heat transfer course
- 2010 – 2013 Graduate Student Researcher, **IFP Energies Nouvelles, France**
Optical Diagnostics for Engine Combustion
- Laboratory experiments with high-pressure and high-temperature vessels
 - Soot volume fraction and primary particle size measurements
 - Spray characterization
 - Image processing
- 2013 – 2013 Visiting Scientist, **Meiji University, Japan**
Optical Diagnostics for Combustion Lab of Prof. Tetsuya Aizawa
- Transmission electron microscopy
 - Nanostructure analysis
- 2009 – 2010 Authorized Executive Officer/Procurement, **Uzel Automotive GmbH, Germany**
Suspension Systems for Commercial Vehicles
- A middle-sized enterprise with a €3.5 MM annual turnover
 - Full profit and loss responsibility
 - Achieved 11% cost reduction in direct operations
- 2009 – 2009 Master Thesis, **Robert Bosch GmbH, Germany**
Research and Advance Engineering
- 3D computational fluid dynamics (CFD) analysis
 - Validations of numerical models for gasoline direct injection engines
 - Influences of mesh resolution and turbulence models
- 2008 – 2009 Research Assistant, **RWTH, Germany**
Institute of Internal Combustion Engines
- Influence of different injector geometries on Diesel combustion
 - Emission optimization

Awards and achievements:

- 2021 Guest editor for Transportation Engineering journal
- 2020 G20 Co-lead in sustainable mobility theme in Climate Stewardship Working Group
- 2019 Nominated for outstanding teaching awards, University of Birmingham
- 2017 – ongoing Reviewer for the journal Combustion and Flame
- 2017 – ongoing Reviewer for the Proceedings of Combustion Symposium
- 2016 – ongoing Reviewer for the SAE international journal of engines
- 2015 President of Youth-20 (Y20) – official outreach group of G20
- 2011 – 2014 Founder and Chairman of The Youth Commission for Diplomacy and Collaboration
- 2014 – ongoing Reviewer for the journal Applied Physics B
- 2008 – 2009 RWTH full tuition scholarship for academic merit (€16,000)
- 2008 – 2009 DAAD-TEV scholarship recipient (€27,000)
- 2005 Vehbi Koç Scholar – Best grade award, Koç University
- 2005 Dean's honor roll, Koç University
- 2002 – 2007 Merit scholarship recipient, Koç University (\$75,000)
- 2000 – 2001 Honor Student, ÜAL High School

Emre Cenkler
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