Isil AYRANCI KILINÇ

Home Country
Turkey

Degree
Post-Doctorate in Combustion Diagnostics

Expertise
Chemical Engineering

Research Focus
Combustion Characteristics of Liquid Fuel Injectors

Host University
University of Cambridge, United Kingdom

Fellowship Awarded
2008

Işil Ayranci Kilinç is a post-doctoral research associate at the Energy Group of Cambridge University Engineering Department, in the United Kingdom. Her research in combustion diagnostics and thermoacoustics focuses on low-emission fuel injection technologies for next generation aero-engines. She has been leading the research activities at the Cambridge High Pressure Combustion Facility since 2008.

Born in 1978 in Ankara, Turkey, Işil received a doctorate degree in thermal and energy science from INSA Lyon and a PhD degree in chemical engineering from Middle East Technical University (METU), Ankara, upon completion of a French-Turkish joint doctoral program in 2007. During her PhD, she received a French government grant to support her studies in France and she also worked as a teaching assistant at METU in graduate and undergraduate level chemical engineering. Following her PhD on characterization of soot particles in flames, she was honored with national and international recognition including the 2007 Young Scientist Award in Radiative Transfer from Elsevier; METU 2007 Best Thesis Award from Mustafa Parlar Foundation; and 2007 Best Dissertation Award in Physics and Materials Science from the EADS Foundation as a result of a nationwide competition in France.

Her research is on the experimental investigation of fuel injectors of aircraft engine gas turbine combustors using optical- and laser-based diagnostics techniques. The objective of her work is to contribute to ongoing research on lean-burn combustion technologies for next-generation aero-engines. Currently in a development stage, these engines will improve fuel efficiency and reduce pollutant emissions to meet increasingly stringent environmental regulations. Lean-burn combustors offer strong potential to reduce nitrous oxide emissions which contribute to photochemical smog formation along with acid rain and depletion of the stratospheric ozone layer. Isil carries out her experimental studies in a high-pressure combustion facility funded by a University Gas Turbine Partnership between the University of Cambridge and Rolls-Royce plc. The test facility can operate at realistic high pressures and temperature conditions with full-size prototype injectors.

When she returns to Turkey following her post-doctoral studies, Isil plans to become a faculty member at one of the leading technical universities.