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Editorial

# Advanced energy technologies in aviation

This special issue consists of original, peer-reviewed articles, most of which were presented at the International Symposium on sustainable aviation 2016 (ISSA-2016), which was held between May 29-June 1, 2016 in Istanbul, Turkey. *ISSA-2016*, being an international and multi-disciplinary symposium, is aimed to address the current issues in the field of aviation such as improving aircraft fuel efficiency, fostering use of bio-fuels, minimizing environmental impact, mitigating greenhouse gas emissions and reducing of engine and airframe noise. Aviation is considered as one of the major sources of environmental problems and considered a prominent cause of sustainability. Future trends in aviation could constitute a major impediment to have sustainable development in economic, social and environmental perspectives. Sustainable aviation is a long term strategy aiming to offer innovative solutions to the challenges facing the aviation industry. As we are in an era in which there is a continuous progress in aviation, researchers, scientists, engineers, practitioners, policy makers, and students attended to this international symposium to exchange information, present new technologies and developments, and discuss the future direction, strategies and priorities in the field of sustainability. A broad range of aviation-related issues with particular emphasis on environmental problems associated with sustainability were covered in this conference.

This special issue includes articles on topics such as hybrid-electric propulsion, application of thermodynamics to turbojet engines, emission inventory assessment inside the airport area, nearly-zero exergy airport systems, alternative fuels in aviation, regression models for predicting compressor and turbine performance, architecture-based energy management in sustainable airports, and so on. We hope that this special issue of Energy will increase the awareness on sustainable aviation, and attract more attention to this important topic.

The preparation of this special issue was indeed collectively done in an international manner. We would like to express sincere thanks to all the reviewers of this issue who have generously contributed their time and efforts to ensure the highest possible quality of this special issue. We would also like to thank Henrik Lund, for his guidance and support in arranging this issue.

**Professor T. Hikmet Karakoc** was born in 1959. He graduated from Anadolu University, the Department of Mechanical Engineering, in 1980. He received his M.Sc. degree in Mechanical Engineering from Yildiz Technical University of Istanbul, in 1982. He received his Ph.D. degree from Anadolu University of Eskisehir, in 1987. He started his full-time teaching at Anadolu University where he is now a Professor. He became an Assistant Professor and an Associate Professor, in 1988 and 1992, respectively. He received his full Professorship in 1997 from Anadolu University in Eskisehir. He has a wide range of research interests, some of his interest topics are "Sustainable Aviation, Aircraft Propulsion System, Insulation, Heating Ventilation and Air Conditioning (HVAC), Indoor Air Quality, Gas Turbines, Cogeneration Systems, Renewable Energy, Energy Economics, Fuels and Combustion". He has taken part in numerous Industrial Projects on these topics as researcher, consultant and project coordinator. He served as a consultant more than corporation 30. He also started a contest on special insulation applications (tall buildings, hospitals, historical buildings, etc.) among the university students. He also served as an Editor-in Chief for main journal on HVAC sector in Turkey. He published national and international papers over 250 and 30 books. He is founder and president of SARES (Sustainable Aviation Research Society) and active member of Chamber of Mechanical Engineers and many sectorial associations, various international scientific organizations and societies. He is also Editor-in Chief of International Journal of Sustainable Aviation.

**Professor M. Baris Ozerdem** has graduated from Dokuz Eylül University (DEU) Mechanical Engineering Department in 1982. He has gained his M.S. and Ph.D. degrees from DEU, respectively, on the fields of Construction-Manufacturing in 1985 and Thermodynamics-Energy in 1991. He has worked as a research assistant at DEU between 1983 and 1992, and as a researcher at the Catholic University of America between 1992 and 1994. Between 1994 and 1999 he has worked as a business executive and partner for a private company. Prof. M. Baris Ozerdem has rejoined the faculty position at İzmir Institute of Technology between 1999 and 2012. Meanwhile, he has served as Mechanical Engineering Department Head between 2002 and 2006, Dean of Graduate School between 2006 and 2007, and Dean of Engineering Faculty between 2007 and 2010. Prof. M. Baris Ozerdem has also worked at Bahcesehir University (BAU), Department of Energy Systems Engineering until 2016. He was head of the department at BAU between 2014 and 2016. Prof. M. Baris Ozerdem is the founding president of American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) Turkish Chapter. His main research areas are; thermodynamics, heat transfer, HVAC applications, and renewable energy. In addition, Prof. M. Baris Ozerdem is a member of Editorial Board of SCI listed journal Energy and Buildings. Prof. M. Baris Ozerdem currently serving as founding chair of Aerospace Engineering Department at Izmir University of Economics.

**Associated Professor M. Ziya Sogut** graduated as a Mechanical Technical instructor from the Faculty of Technical Education of Marmara University, Turkey, in 1988. He received his MD and PhD in Mechanical Engineering from the University of Balikesir, Turkey, in 2005 and 2009, respectively. In 2013, he took the title of Associate Professor as the expert of energy technology. Currently, he has been working as a guest lecturer in the Graduate School of Science of Anadolu University and Maritime Faculty of Piri Reis

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University, he has given courses of undergraduate, master's degrees and PhD in based on thermodynamic and fluid mechanics issues. His current research interests include energy, exergy and exergoeconomic analysis, refrigerants and cooling applications, air-conditioning systems, energy recovery systems and applications of wind energy and aviation technologies.

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