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Dept. of Aerospace
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Expertise areas:

- Rotary wing aerodynamics and CFD simulations
- Wind turbine/helicopter rotor aerodynamic design and performance analysis
- CFD simulations of wind turbine/wind farm flow fields and wakes
- CFD simulations of flow fields around buildings

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Recent Related Projects:

TAI - TUSAŞ Türk Havacılık ve Uzay San. A.Ş., ODTU Teknokent, “Özgün Helikopter Projesi / Indigenous Utility Helicopter Design Project,” 12 Months, 4 days/month, Jan-Dec 2015, Danışmanlık / Consultancy.

AEROTIM - AeroTIM Mühendislik Yazılım ve Danışmanlık San. Tic. Ltd. Şti., ODTU Teknokent, “Paralel Hesaplama Mimarili Serbest Girdap İzi Kullanılarak Aerodinamik Benzetim Yazılımının Geliştirilmesi,” TÜBİTAK TEYDEB Project – No 7120764, 1 Months, 2 days/month, 1 Jan 2013 - 1 Feb 2013, Danışmanlık / Consultancy.

TURBOTEK - TURBOMakina TEKnolojileri Ltd. Şti., ODTU Teknokent, “Turbotek Yüksek Performanslı Rüzgar Türbini Ticari Ürününün Geliştirilmesi,” TÜBİTAK TEYDEB Project, 20 Months, 1 day/month, 01 Jan 2011 - 30 August 2012, Danışmanlık / Consultancy.

AEROTIM - AeroTIM Mühendislik Yazılım ve Danışmanlık San. Tic. Ltd. Şti. ODTU Teknokent, “Helikopter Dinamik Modelleme ve Analiz Yazılımı Geliştirilmesi,” TÜBİTAK TEYDEB Project – No 7100244, 15 Months, 1 day/month, 1 Oct 2010 - 1 Jan 2012, Danışmanlık / Consultancy.

TAI - TUSAŞ Türk Havacılık ve Uzay San. A.Ş., ODTU Teknokent, “TEYDEP-ROTA Projesi Aerodinamik Tasarım ve Analiz İş Paketi,” TÜBİTAK TEYDEB Project, 2 Months, 1 day/month, Nov-Dec 2010, Danışmanlık / Consultancy.

HELİS MAKİNE: Helis Makine San. Tic. Ltd. Şti., İzmir Ege Univ. Teknokent, “20 kVA Otonom Rüzgar Türbini Prototip Üretim Projesi,” TÜBİTAK TEYDEB Project – No 3070210, 16 Months, 1 day/month, 2007-2008. Danışmanlık / Consultancy.

Recent Publications:

- Monier A. Elfarra, Nilay Sezer-Uzol, and I. Sinan Akmandor, “Investigations on Blade Tip Tilting for HAWT Rotor Blades Using CFD,” *International Journal of Green Energy*, (Published Online: 08 Oct 2014) Vol. 12, Issue 2, 2015.
- Monier A. Elfarra, Nilay Sezer-Uzol, and I. Sinan Akmandor, “NREL VI Rotor Blade: Numerical Investigation and Winglet Design and Optimization Using CFD,” *Wind Energy*, (Online Early View, 6 February 2013) Vol 17. Issue 4. pp 605-626, April 2014.
- Sezer-Uzol, N. and Uzol, O., “Effect of Steady and Transient Wind Shear on the Wake Structure and Performance of a Horizontal Axis Wind Turbine Rotor,” *Wind Energy*. (Online Early View, 3 OCT 2011) Vol 16. Issue 1. pp 1-17, January 2013.
- Ozge Polat, Nilay Sezer-Uzol, Ismail H. Tuncer, Genetic Algorithm Based Aerodynamic Shape Optimization Tool for Wind Turbine Blades and its Implementation to Helicopters, AHS 70th Forum and Technology Display, Montreal, Canada, May 19-22, 2014.
- M. Turkal, Y. Novikov, S. Usenmez, N. Sezer-Uzol, O. Uzol, GPU Based Fast Free-Wake Calculations for Multiple Horizontal Axis Wind Turbine Rotors, The Science of Making Torque From Wind, Copenhagen, Denmark, 18-20 June 2014.
- Ismail Ozan Sert, Samet Caka Cakmakcioglu, Ozan Tugluk, Nilay Sezer-Uzol, CFD Investigation of Two Axially Noncollinear Turbines Using Actuator Disk Model and Overset Grids, The Science of Making Torque From Wind, Copenhagen, Denmark, 18-20 June 2014.
- Samet Caka Cakmakcioglu, Ismail Ozan Sert, Ozan Tugluk, Nilay Sezer-Uzol, 2D and 3D CFD Investigation of NREL S826 Airfoil at Low Reynolds Numbers, The Science of Making Torque From Wind, Copenhagen, Denmark, 18-20 June 2014.