**Prof. Dr. Altan Kayran**
Dept. of Aerospace Engineering

## Expertise areas:

- Wind turbine dynamics, loads and aeroelasticity
- Composite materials: mechanics and manufacturing
- Wind turbine blade design and analysis

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# Recent Projects:

"Determination of design criteria for composite repair regions and progressive failure analysis", *Grant No:* 2015-03-13-2-00-07 , *Funding Agency:* TAI Inc. and SSM (Undersecretariat of Defense Industry). SAYP Project with TAI Ltd.

"Determination of the bending-twisting coupling in composite structures via digital image correlation (DIC) method and exploiting bending-twisting coupling in passive load control in horizontal axis wind turbines", *Grant No:* 213M611, *Funding Agency:* TUBITAK.

"Interlaminar Progressive Failure Analysis in Composite Structures", *Grant No:* 2014-03-13-2-00-02 , *Funding Agency:* Roketsan Inc. and SSM (Undersecretariat of Defense Industry). SAYP Project with Roketsan Ltd.

"Design and manufacturing of a tactical unmanned air vehicle", Grant No: 108M104, *Funding Agency:* TUBITAK.

# Recent Publications:


- Çınar, O., Erdal M., Kayran, A., Accurate Equivalent Models of Sandwich Laminates with Honeycomb Core and Composite Face Sheets via Optimization Involving Modal Behavior, *Journal of Sandwich Structures and Materials,* DOI:10.1177/1099636215613934, 2015.
- Dababneh, O., Kayran, A., Design, Analysis and Optimization of Thin Walled Semi-Monocoque Wing Structures Using Different Structural Idealizations in the Preliminary Design Phase, *International Journal of Structural Integrity,* Vol 5, No:3, pp.214 226, (2014).
- Günel, M., Kayran, A., Non-Linear Progressive Failure Analysis of Open-Hole Composite Laminates Under Combined Loading, *Journal of Sandwich Structures and Materials*, Vol. 15(3), pp.309-339, (2013).
- Farsadi,T., Kayran, A., Aeroelastic Stability Evaluation of Bend-Twist Coupled Composite Wind Turbine Blades Designed for Load Alleviation in Wind Turbine Systems, AIAA 2016-1009, *AIAA Science and Technology Forum and Exposition, AIAA SciTech 2016,* 4-8 January 2016, San Diego, California, USA.
- Farsadi,T., Kayran, A., Classical Aeroelastic Stability Analysis of Large Composite Wind Turbine Blades, AIAA 2016-1959, *AIAA Science and Technology Forum and Exposition, AIAA SciTech 2016,* 4-8 January 2016, San Diego, California, USA.
- Gözcü, M.O., Farsadi,T., Şener, Ö., Kayran, A., Reduction of Fatigue Damage Equivalent Loads in the Wind Turbine System Through the Use of Off-Axis Plies in the Spar Caps of Composite Wind Turbine Blades, 20th International Conference on Composite Materials, Copenhagen, 19-24th July 2015.