

Akhil Bhasin

Professional Profile:

Akhil Bhasin joined the National Institute for Aviation Research (NIAR) in 2015 and is currently the technical lead for materials and research team at Advanced Virtual Engineering and Testing (AVET) Laboratories. His primary duties include developing high fidelity material models for numerical analysis, designing fixtures for non-standard experiments and conducting fundamental research to improve modeling and simulation methods for the analysis team. Akhil is currently pursuing PhD at Wichita State University with research dedicated towards energy absorption of composite materials in Aircraft. He has had the opportunity to work on different aspects of composite materials including repair, effects of defects, strain rate sensitivity and progressive damage and failure analysis.

Professional Experience:

- 7/2015-Present | **Research Engineer** | National Institute for Aviation Research | USA
- 2/2013-6/2015 | **Graduate Researcher** | Wichita State University | USA

Research Areas and Experience:

- *Eight* years of experience in material model development, stress analysis, composite manufacturing and designing nonstandard fixtures for sub-component level tests
 - Material model development for certification by analysis methods
 - Develop strain rate dependent material properties for metals and reinforced composite materials
 - Investigate effect of defects on energy absorption capabilities of thermoset composite materials
 - Investigate effect of liquid disinfectants and UV-C light on materials used in cabin interior
 - Perform explicit/implicit stress analysis at sub-component level to validate material models
 - Manufacture monolithic composite laminates, honeycomb core sandwich panels for research projects

Education:

- Doctor of Philosophy in Aerospace Engineering – 2024 – Wichita State University, Wichita, KS, USA
- Master of Science in Aerospace Engineering – 2016 – Wichita State University, Wichita, KS, USA.
- Bachelors in Aerospace Engineering – 2012 – University of Hertfordshire, Hatfield, UK.

Publications:

- G. Olivares, L. Gomez, A. Bhasin, L.D. Castillo, A.Kona Ravi, T. Maichan, “Effect of Disinfectants on Aircraft Seating Materials”, FAA Report, DOT/FAA/TC-21/18
- G. Olivares, C. Zinzuwadia, S. Keshavanaryana, A. Bhasin, J.F. Acosta, “*Simplified Joint Modeling for Large-Scale Crashworthiness Structures*” FAA Report, DOT/FAA/TC-20/1
- A. Bhasin, S. Keshavanarayana, “*Parasitic Effects of Including Microwire Sensor Tube on In-Plane Compressive Strength of CFRP Composite Laminates*” American Society of Composites – 34th Technical Conference, Atlanta, GA, 2019
- A. Bhasin, S. Keshavanarayana, L. Gomez, A. Kona, B.P. Justusson, G. Olivares, “*Progressive Damage and Failure Analysis of Bonded Composite Joints at High Energy Dynamic Impacts*” American Society of Composites – 34th Technical Conference, Atlanta, GA, 2019
- A. Kona, A. Bhasin, L. Gomez, G. Olivares, S. Keshavanarayana, J. Pang, M. Molitor, M. Rassaian, “*Evaluation of Ls-Dyna MAT162 for Modeling Composite Fastener Joints for High Rates of Loading*” 2019 AIAA Science and Technology Forum and Exposition (SciTech), San Diego, CA, January 2019
- A. Bhasin “*Effect of Embedding Cylindrical Microwire Sensor Tubes on the In-Plane Compressive Strength of CFRP composite laminates*”, Master Thesis, Wichita State University, 2016