

Syed Firasat Ali
Associate Professor
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EDUCATION

- Ph.D. 1976 Fluid Dynamics, The Johns Hopkins University, Baltimore. MD, USA; thesis on two dimensional turbulent wake flow.
- MS 1969, Mechanical Engineering, University of Windsor, Windsor, Ontario, Canada; thesis on anisotropic turbulence in wind-tunnel.
- BS 1965, Mechanical Engineering, University of Karachi, Karachi, Pakistan

RESEARCH INTERESTS

Study of mixing in turbulent air flows with heat as a contaminant; Hot-wire anemometry and measurement of fluctuating temperature in aerodynamic flows; Fluid dynamics of hurricanes; Above real time & feedback Strategies including human factors for training of novice pilots on flight simulators; Integrating design, teamwork, hands-on and interdisciplinary contents in undergraduate engineering curriculum; Operators' access to procedures in nuclear power plants.

FUNDED RESEARCH AS Principal Investigator (PI)

The projects included NASA sponsored work on Self-Instruction Methods and Above Real Time Training (ARTT) for maneuvering tasks on a Flight Simulator, US Air Force sponsored work on ARTT, Alabama Missile & Space Center work on Aerodynamic Performance of a Supersonic Spinning Missile, US Department of Energy work on Computerized Management Infrastructure for a Commercial Nuclear Power Plant.

PRESENT RESPONSIBILITIES

Teaching of undergraduate and graduate courses including Conceptual Airplane Design. Airplane Performance, Airplane Flight Stability and Control, Propulsion, and Fluid Mechanics; and conduct research with participation of graduate and undergraduate students. Academic Advising of undergraduate students.

PROFESSIONAL EXPERIENCE

- August 1990 to present - Associate Professor Aerospace Engineering, Tuskegee University, Tuskegee, AL
- Summer 2010 – Visiting Faculty, Missouri University of Science & Technology; Studied Radionuclide Transport in the Environment and conducted gamma spectrum measurements of radioactive specimens.

- Winter 1999-2000 - As a UN Consultant under TOKTEN Program, visited Pakistan Navy Engineering College, Karachi for 3 wks to introduce advance research areas and the Ph.D. program at Tuskegee University.
- Summer 1994 - Worked with Aerodynamics Group of High Speed Civil Transport (HSCT) Project at Boeing; on the conceptual design of the wing.
- Summer 1992 - Visiting Faculty, Michigan State U.; Studied mean temperature and fluctuations in temperature to represent turbulent mixing in the wake of a slightly heated W shaped plate.
- Summer 1986 - Visiting Scholar, Columbia U.; Visualized turbulence with a laser sheet in a jet of water containing drag reducing polymer.
- June 1976 to Dec 1988- Associate Professor until '79, Professor Mechanical Engineering until '88, Dean of Engineering from Feb '87 to Feb '88, NED University of Eng & Tech, Karachi, Pakistan

MEMBERSHIPS

AIAA, ASME, ASEE, and Sigma Xi (ΣX)

SELECTED PUBLICATIONS

- Ali, S. F., Harris, V. G., Mayo, R.H., Jr., Grid-like Elevation Patterns for Low-Rise Buildings in Hurricane-Prone Areas, ASCE Structures Congress (May 11 -15, Florida) Proceedings (p 3262 -3269), 2010
- Ali, S. Firasat, Use of Biplane Grids for On-Site Studies of Hurricanes, Modern Applied Science , v3, n1, January 2009.
- Ali, S.F., Khan, M.J., Rossi, M.J., Heath, B.E., Crane, P., Ward, M., Crier, T., Knighten, T. and Culpepper, C., Development and Assessment of a Novel Training Package For Basic Maneuvering Tasks on a Flight Simulator Using Self Instruction Methods and Above Real Time Training (ARTT), Final Technical Report on the NASA Grant # NAG4 226, March 2007.
- Khan, M.J., Rossi, M., Heath, B., Ali, S.F. and Ward, M., An Experimental Study of Out-of-the-Window Cues on Training of Novice Pilots on a Flight Simulator, Human Factors and Ergonomics Society Conference, San Francisco, California, October 16 -19, 2006.
- Ali, S.F., Hajek, B., and Usman, S., Development of a Flexible Computerized Management Infrastructure for a Commercial Nuclear Power Plant, Final Technical Report, US Department of Energy Grant DE-FG07-04ID14554, May 2006.
- Harris, V., Ali, S.F., Crier, T., and Capps, J., Participatory Study on Integrating UEET like Engines with the conventional jet transport airframes, submitted to Boeing/NASA, Nov. 2002.
- Ali, S.F. Critical Review of literature on the Aerodynamic Performance of a Supersonic Spinning Missile with Dithering Canards, submitted to Missile and Space Intelligence Center at Alabama, USA, August 2002.
- Aglan, H. and Ali, S.F., Hands-on Experience: An integral part of engineering curriculum, Journal of Engineering Education, October 1996.
- Ali, S.F. and Ibrahim, E.A., Coincidence of Turbulent-non-turbulent interface and hot-cold interface in a plane turbulent wake, Mechanics Research Communications, vol 23, p. 91 – 102, 1996.
- Tucker, H.J. and Ali, S.F. Decay of Anisotropic Turbulence, AIAA Journal, vol 111, p. 546 -548, 1976.
- Ali, S.F., Hot-wire Anemometry in Moderately Heated Flow, Review of Scientific Instruments, v46, p 185-191, 1975.