IOWA STATE UNIVERSITY

AIRCRAFT ICING PHYSICS & ANTI-/DE-ICING TECHNOLOGY LABORATORY
http://www.aere.iastate.edu/icing/

- Our research focuses on elucidating underlying physics of important micro-physical processes pertinent to aircraft/aero-engine icing and other relevant atmospheric icing phenomena (e.g., wind turbine icing, bridge cable icing, power cable icing and solar panel icing) via comprehensive theoretical, computational and experimental studies.

- By leveraging the unique ISU Icing Research Tunnel (i.e., ISU-IRT), we are working on developing innovative and effective anti-/de-icing strategies to ensure safer and more efficient operations of aircraft/aero-engines and other related devices in cold weathers.

- ISU Icing Research Tunnel (i.e., ISU-IRT) is a newly refurbished, research-grade, multi-functional icing tunnel. It can duplicate/simulate atmospheric icing phenomena over a range of conditions.

- The working parameters of ISU-IRT include:
  - Test section size: \( W \times H \times L = 0.4 \text{m} \times 0.4 \text{m} \times 2.0 \text{m} \)
  - Airflow velocity: \( V_\infty = 5 \sim 100 \text{ m/s} \)
  - Temperature: \( T_\infty = -25 \degree \text{C} \sim 20 \degree \text{C} \)
  - Droplet size: \( D_{\text{droplet}} = 10 \sim 100 \mu \text{m} \)
  - Liquid Water Content: \( LWC = 0.1 \sim 5.0 \text{ g/m}^3 \)

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CURRENT RESEARCH SPONSORS: