

PHD SPOT ADMISSIONS 2025 BROCHURE



**INDIAN INSTITUTE OF
TECHNOLOGY KANPUR**

**AEROSPACE
ENGINEERING**

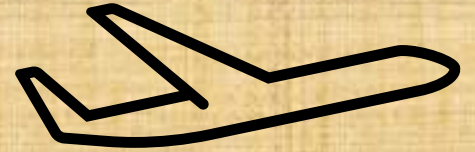


PhD Spot admissions

- ≧ We warmly invite you to apply to the PhD program (July 2025) at the Dept. of Aerospace Engineering, Indian Institute of Technology Kanpur
- ≧ Interviews will be conducted on your campus or online for eligible students
- ≧ Scholarships of INR 37,000 for the first two years and thereafter, INR 42,000 per month for another three years
- ≧ Register your interest here by Feb. 15:

<https://forms.office.com/r/faX5gaDLsP>

- ≧ Further details: <https://iitk.ac.in/aero/phd-program>



Resister
here



Eligibility

Student should be

- ✓ From an institute ranked in the Top 100 of the NIRF Engineering Institutes ranking of 2024:

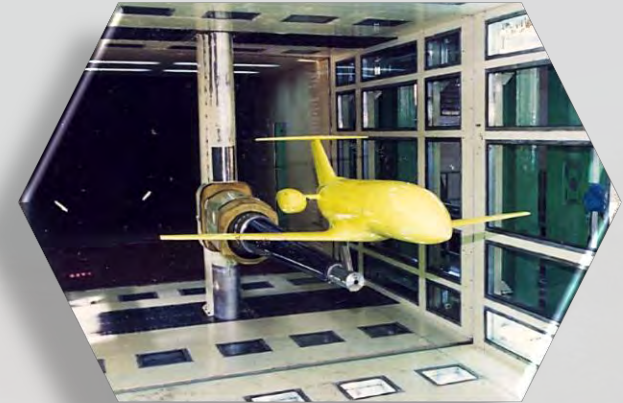
<https://www.nirfindia.org/Rankings/2024/EngineeringRanking.html>

- ✓ Final year B. Tech. with CGPA > 7.5
- ✓ All Engineering departments including Aero., Mech., Electrical & Civil Engineering
- GATE score required only post-offer (at the time of registration)

About the Department



The department houses a one-of-a-kind Flight Lab with three single-engine airplanes, a motored glider and a 1000 m runway



Established in 1964, the Department of Aerospace Engineering at IITK is one of the prominent centers for advanced flight research



The National Wind Tunnel Facility at IITK is one of the few large-scale wind tunnels in all of India (test section: 2.25m x 3m x 8.75 m)

Information

4

NIRF 2024
Engineering
Ranking

5

NIRF 2024
Overall Ranking

101

QS 2024 Subject
Ranking

33

Faculty members

400+

Journal
publications in
past 5 years

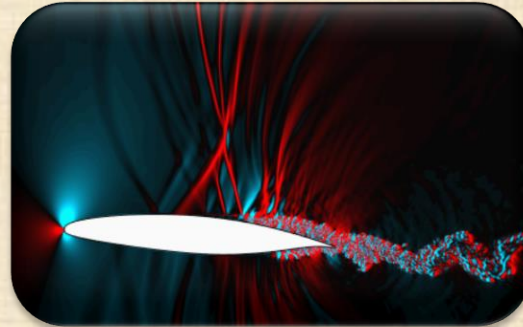
60+

Ongoing
sponsored projects

Research groups



**Flight Dynamics
& Control**



Aerodynamics



Propulsion

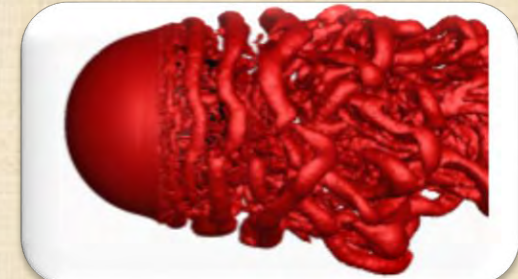


**Structures, Structural
Dynamics &
Aeroelasticity**

Four major research groups (Aerodynamics, Flight mechanics & Control, Propulsion, and Structures, Structural Dynamics & Aeroelasticity) and two Interdisciplinary Specializations (Aero-Thermodynamics & Thermal Sciences and Computational Mechanics)



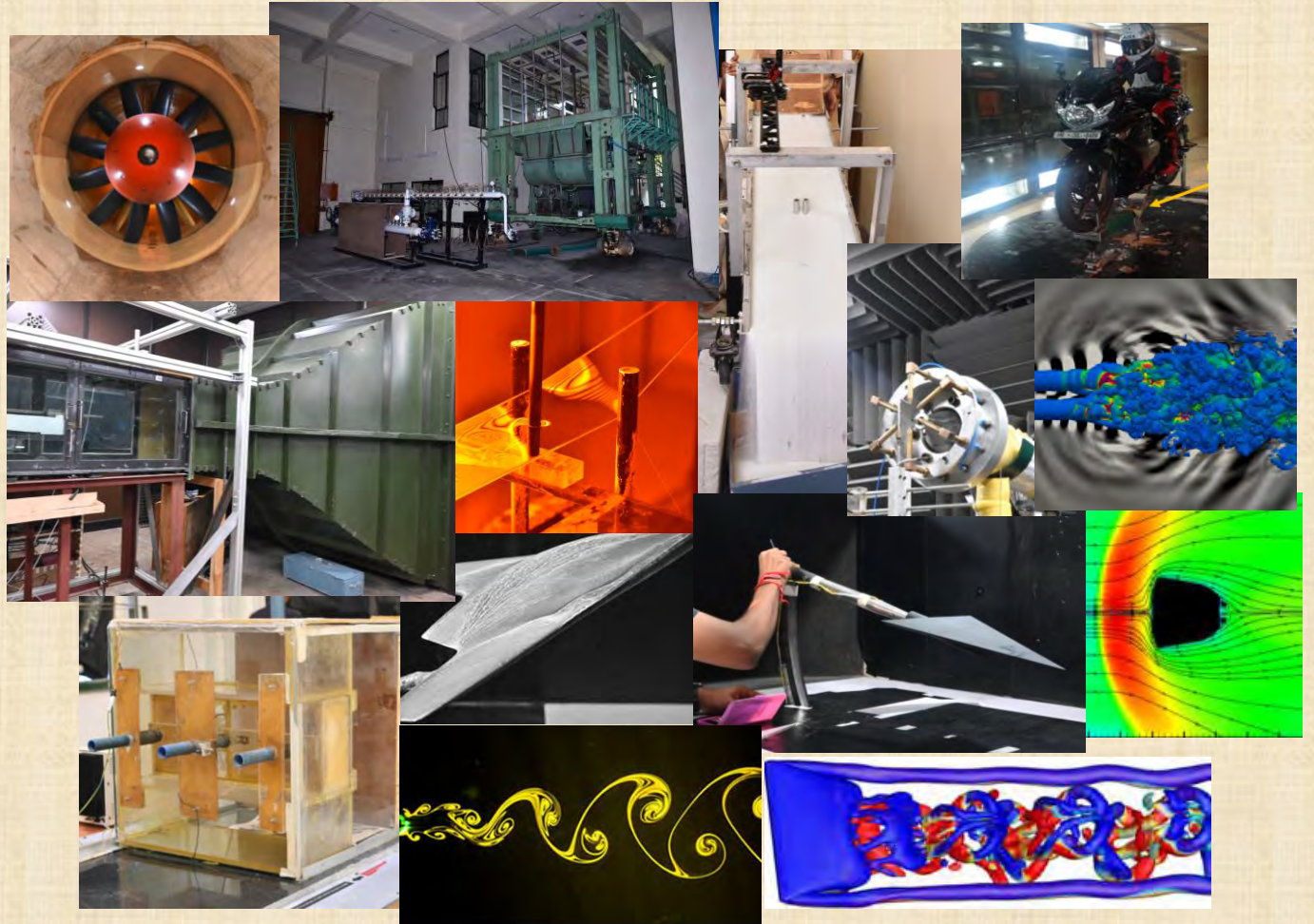
**Aero-Thermodynamics
& Thermal Sciences**



**Computational
Mechanics**

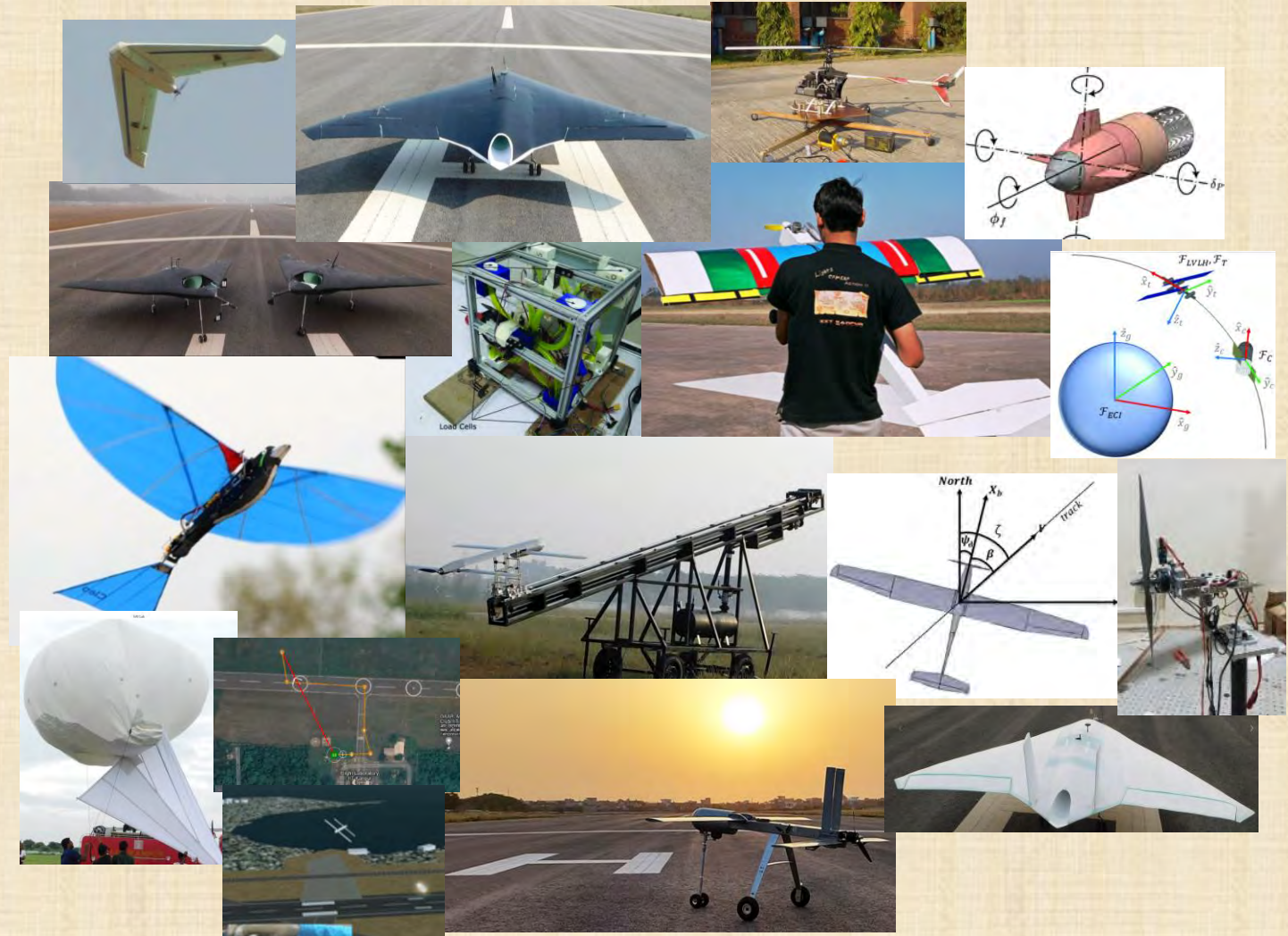
Aerodynamics

- Experimental Aerodynamics
- Computational Fluid dynamics
- Transition and Turbulence
- Hypersonic aerodynamics
- Transonic aerodynamics
- Sports aerodynamics
- Spacecraft aerodynamics
- Microfluidics
- Granular flow
- Acoustics
- Wind energy and design
- Fluid-Structure interactions



Flight Mechanics & Control

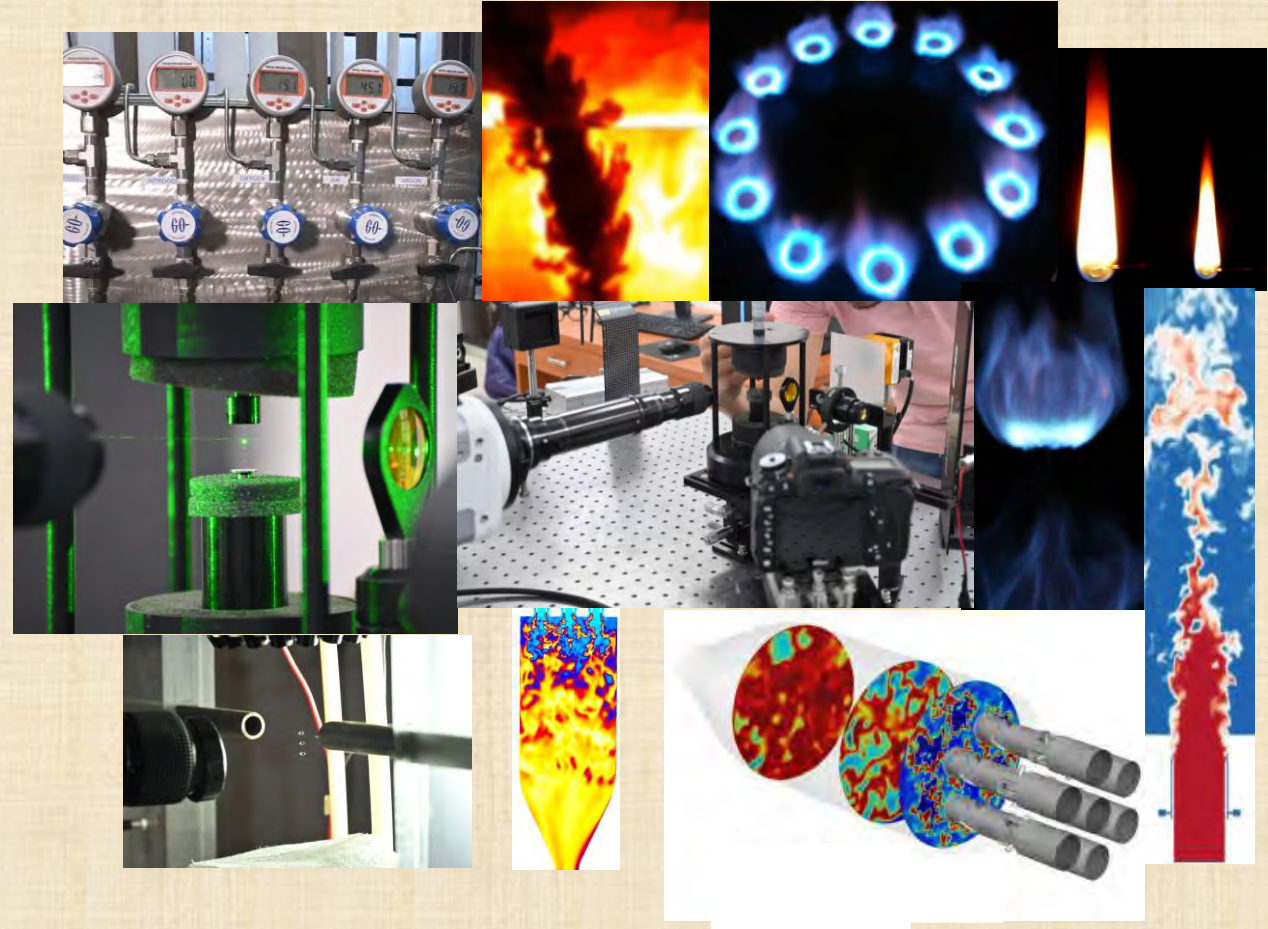
- Design & Control
- Missile Guidance & Control
- Flight Testing
- Instrumentation & Parameter Estimation
- Unmanned & Autonomous Air Vehicle
- Space Dynamics



Research Areas

Propulsion

- Experimental Combustion
- Computational Combustion
- Emissions
- Intake Aerodynamics
- Internal Flow Control (Active & Passive)
- Flow Diagnostics
- Turbo machinery
- Thrust vectoring
- Electric propulsion
- Liquid atomization and spray combustion



Research Areas

Structures, Structural Dynamics & Aeroelasticity

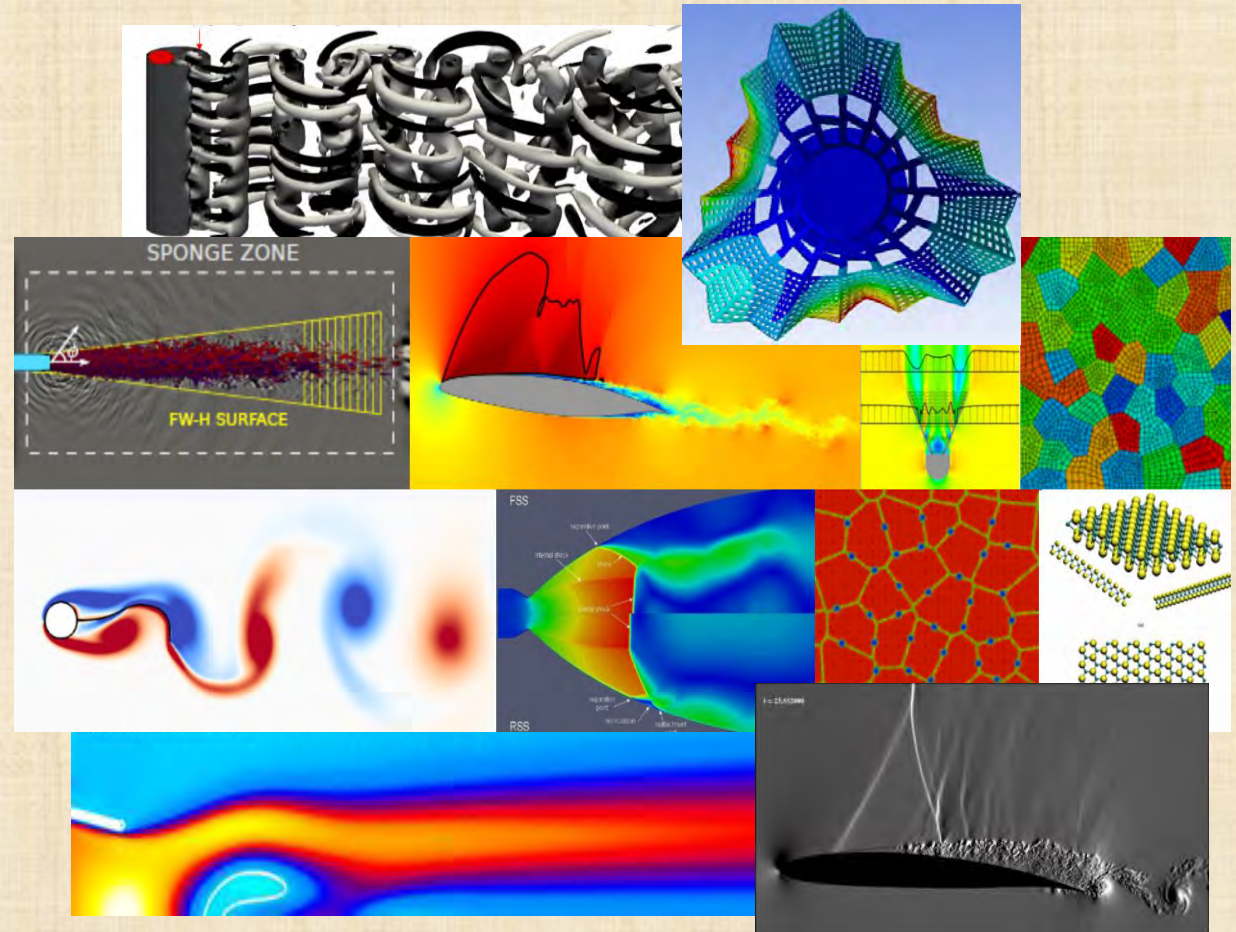
- Material Characterization
- Composite Materials and Smart Structures
- Structural Dynamics and Stochastic Modeling
- Aeroelasticity
- Helicopter Theory (Dynamics & Aerodynamics)
- Structural Design & Optimization
- Damage Modeling
- Design and Dynamics of Autonomous Micro and Mini Air Vehicles



Research Areas

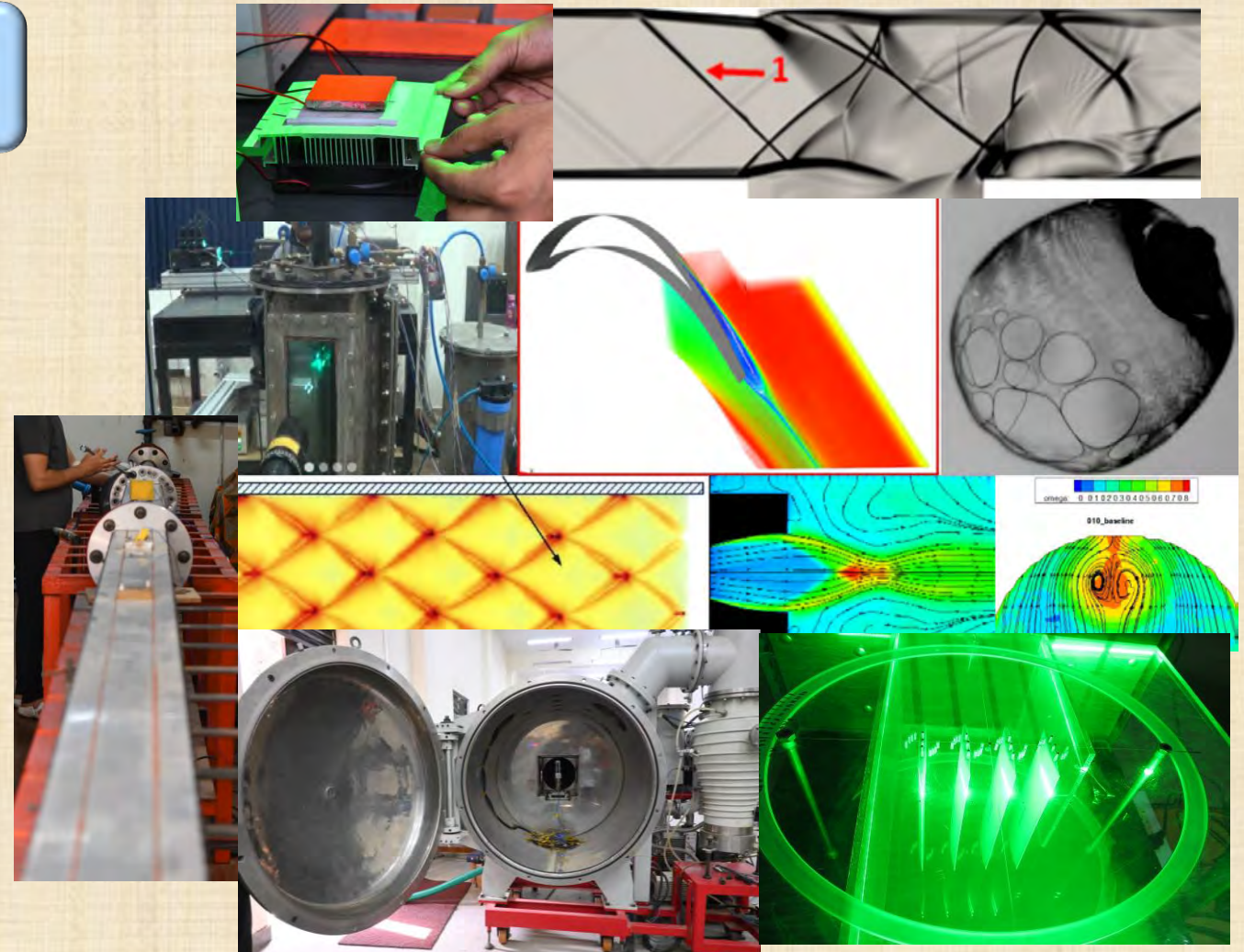
Computational Mechanics

- Computational material modeling
- Machine learning and AI
- Reduced-order models
- Multi-functional composites
- Metamaterials
- Plasticity, fatigue, fracture
- Uncertainty quantification
- Optimization and inverse models
- Fluid-Structure interactions
- Computational fluid dynamics
- Finite Element Method (FEM)
- Theoretical and computational aeroacoustics (CAA)
- Wave mechanics



Aero-Thermodynamics and Thermal Sciences

- High Speed Flows
- Turbomachinery
- Acoustics and Noise
- Multiphase Flows
- Heat Transfer
- Fire Dynamics
- Detonation & Explosions



*Thank you
& hope you
begin your
exciting
research
journey
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REGISTER

