

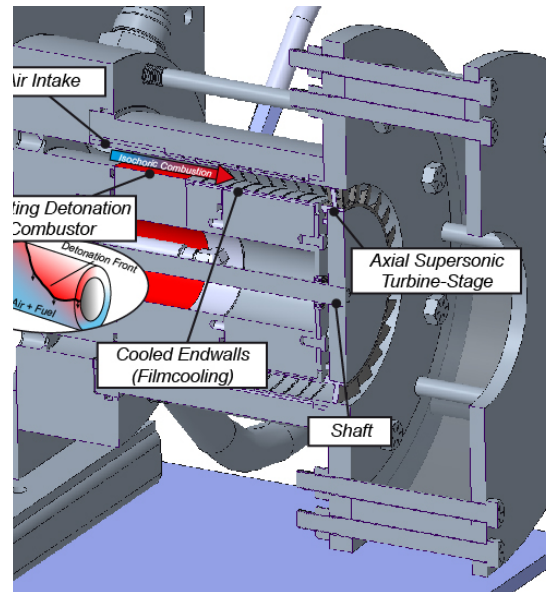
# International Collaborative Advanced Design Project with Purdue University (Indiana, USA)

## Design of a Supersonic Turbine Stage for a Rotating Detonation Combustion

ADP

### Background

The fact that efficiency of the currently used aircraft engine components is getting really close to its limits, and the achievement of aviation's long-term targets to reduce emissions cannot be attained by using traditional technologies, leads to the development of new and innovative technologies. For this reason, the Purdue University has developed a test facility, where rotating detonation combustion can be investigated. To investigate further effects, the test facility will be extended by a turbine stage. Parallel to the TU Darmstadt team, other groups are working at Purdue and Students will have the opportunity to experience a collaborative international design project.



Announced on

**02.02.2021**

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Focus

x	analytical
x	design
	experimental
	numerical

### Tasks

- Literature research on supersonic turbines and design process chains especially for turbines
- Profiling of the blade sections using profiles known from literature
- Development of a tool for generating 3D geometries from profile sections
- Stress analysis of the generated blade geometry