Micro Gas Turbine for Small UAVs

Fall 2022 co-listing:
AAE 535: Propulsion Design, Build, Test
AAE 451: Senior Aircraft Design

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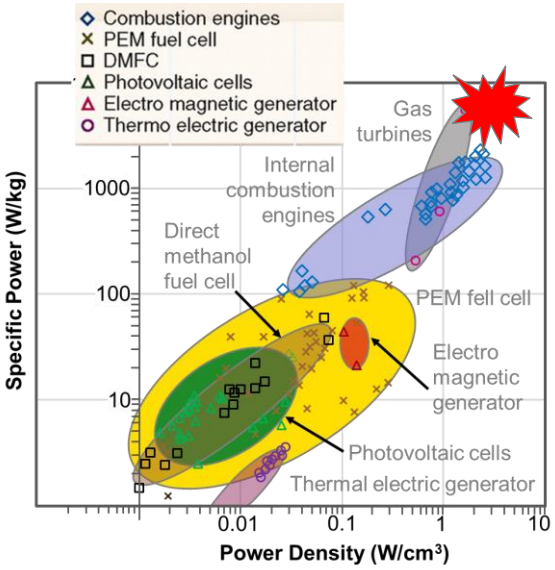
Applications of Unmanned Aerial Vehicles (UAVs)

Onboard Power System

- Energy density: a measure of the energy in the fuel and the conversion efficiency of the engine, watt-hour per kilogram
- Power density: a measure of the power converter (engine), watt per kilogram



flight time of 20-30 mins, severely restricting its applications in many fields such as law enforcement, digital agriculture, disaster relief, surveillance, etc.

Battery-powered drone

Overall objective: design, build and test a smaller and lighter turbine-based engine with high power outputs for small UAVs.

Acceptance criteria: I co-teach 450 and 535 (mixed UG/G teams) in fall 2022. The 450 slots are limited and awarded based on a competitive basis. For both undergraduates and graduate students, please send me your CV for consideration. AAE 438 is a prerequisite.

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