



Resilient and Scalable Microtextured Coatings for Quiet and Efficient Urban Air Mobility

Microtextured coatings cut rotor and propeller noise by 2-4 dB for urban air mobility viability.

Noise pollution is a rising concern due to the development of Urban Air Mobility. Researchers at Purdue University have developed a microtextured coating for urban air mobility vehicles to reduce noise pollution for air vehicles at low altitudes. By coating propellers and rotors with this microtextured coating, air has a smoother flow over the blades, which reduces noise pollution. With this innovation the feasibility of future urban air mobility vehicles is increased.

Advantages:

- Lower noise pollution of 2-4 decibels
- Increased feasibility of Urban Air Mobility
- Large Scale Fabrication

Applications:

- Urban Air Mobility vehicles
- Aircraft noise reduction
- Wind turbine noise reduction
- Drag reduction

Technology Validation: This technology has been validated in lab testing with cylinders coated with and without micro-structures to show the difference in sound levels up to a 2-4 decibel reduction at high speeds.

TRL: 3

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Category

Aerospace & National
Security/Hypersonics &
Propulsion Systems
Aerospace & National
Security/Thermal Management &
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