



Dr. Andrew R Barnard, INCE Bd. Cert., CLD

Assistant Professor, Mechanical Engineering (MEEM)

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My background

B.S., M.S. ME - Michigan Tech, Ph.D. Acoustics - Penn State

Research Associate, Penn State Applied Research Lab (8 yrs)

Areas of research/expertise

Acoustics and Vibrations

- ✓ Carbon Nanotube Thin-Film Loudspeakers
- ✓ Underwater Acoustics
- ✓ Structural Acoustics and Noise Control
- ✓ Crowd Noise

Signal Processing and Dynamic Data Acquisition

- ✓ LabVIEW Certified Developer

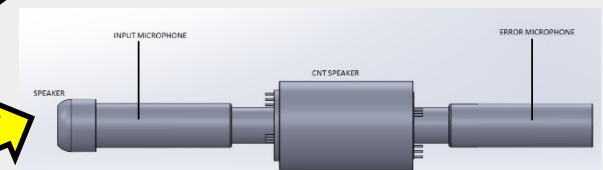
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Solid State Sound – A “Hot” Topic

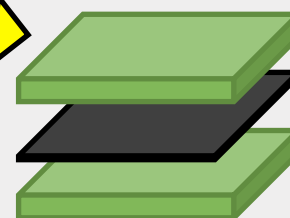
Ultra-thin, flexible electronics



Active Noise Control



Embedded CNT



Vibration & Sensing



To Do List

- Efficiency
- Modeling
- Sensing

Benefits

- Ultra-light weight
- Solid State
- No magnets
- Flexible/Stretchable



Carbon Nanotube Thermophone

