

# Active Control of Sound Transmission through Windows with Carbon Nanotube Based Transparent Actuators

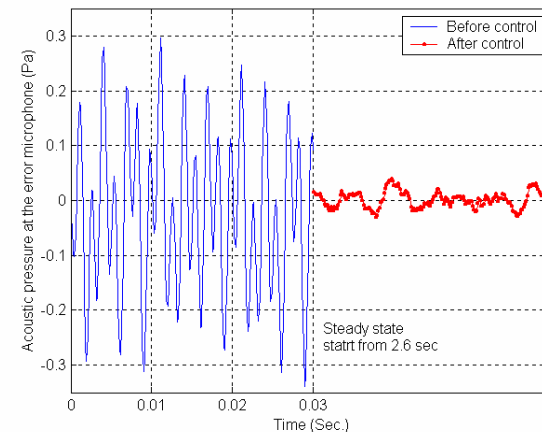
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## DESCRIPTION OF WORK

- ◆ Windows are the primary path through which noise enters homes close to airports and highways
- ◆ This project develops an active noise control system that can significantly reduce noise transmission through windows
- ◆ This project develops an innovative carbon nanotube based transparent thin film actuator for the control system

## Results

- ◆ CNT based transparent thin film actuators have been successfully fabricated
- ◆ Over 15 dB sound reduction has been achieved



## Publications

- ◆ X. Yu, R. Rajamani, K. A. Stelson, and T. Cui, "Carbon nanotube based transparent acoustic actuators and sensors," *Sensors and Actuators A: Physical*, vol.132, pp. 626-631, 2006
- ◆ X. Yu, R. Rajamani, K. A. Stelson, and T. Cui, "Carbon nanotube based transparent conductive thin film," *Journal of Nanoscience and Nanotechnology*, vol.6 (7), pp.1939-1944, 2006
- ◆ X. Yu, R. Rajamani, K. A. Stelson, and T. Cui, "Active control the sound transmission through windows with carbon nanotube based transparent actuators," *IEEE Transactions on Control Systems Technology*, to appear in May, 2007

