

**Development of a System to Reduce Interior Noise of Railway Vehicle Using
Piezoelectric Material**

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In the speed-up of the railway vehicle, reducing the interior noise of the vehicle is important to ensure the comfort for passengers. We have developed a panel-type noise reduction system as a new countermeasure for interior noise of railway vehicle with consideration on the particularity of the railway vehicle. In the noise reduction system, vibration plates with piezoelectric material are arranged in a plane, and the noise transmitted through the vibration plates is reduced by a control circuit. In the case that the noise reduction system was applied to a deck of the Shinkansen, the interior noise was reduced by about 3dB in the target frequency range.