**HI-012b**
**Wireless Sensing for Guidebeam Monitoring**

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**Abstract**
A steel guidebeam is susceptible to the development of cracks at welds and joints, and the interface between a beam flange and a concrete running surface is susceptible to delamination. In recent research activities within ICES, piezoceramic transducers (wafers, roughly the size of quarters) have been studied as active Lamb wave sensors for flaw detection in steel structures, and in a pioneering effort those sensors have been configured to operate in a wireless, passively-powered mode. Here, the wireless passively-powered technology will be applied in experiments on a prototype (or model) steel monorail guidebeam, complementing studies (to be directed by Prof. Sohn) in which Lamb wave illumination and flaw characteristics will be studied. The performance of conventional (wired) transducers and passively-powered (wireless) transducers will be compared in side-by-side tests.