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AMSC helps speed Japanese maglev train to 500kph

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American Superconductor Corp. of Westborough, a maker of alternative electricity systems, reports that Central Japan Railway Co. (JR Central) successfully ran its magnetically levitated train system for the first time using high temperature superconductor (HTS) electromagnetic coils powered by American Superconductor's HTS wire.

The maglev train attained speeds as high as 500 kilometers per hour (approximately 311 miles per hour), while it levitated about 10 centimeters (4 inches) above its "track." Superconductor electromagnets are used as the lifting component in JR Central's maglev train system. Data on the vibration and temperature characteristics of the HTS electromagnet will be collected and analyzed to provide a basis for further improvements.

The maglev train is being considered for Japan's Chuo Shinkansen, a main transportation route connecting Tokyo to Osaka, according to the company. JR Central has been running its maglev trains since 1997 utilizing low temperature superconductor (LTS) electromagnets. HTS electromagnets offer several advantages over LTS electromagnets including a much less complex cooling system allowing simpler designs, lower costs and more reliability, according to AMSC officials.

Additional testing and analysis are required in order for HTS electromagnets to be chosen as the preferred solution for maglev trains. AMSC estimates that the total potential HTS wire requirement for a full, commercial maglev train system for the Tokyo-Osaka run exceeds 100 million meters (62,137 miles).

