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**Electromechanical Energy Transduction for Hybrid Vehicles**

SRIDHAR REDDY VANJA, Department of Physics, University of Missouri Kansas City, MICHAEL W. KELLY, School of Computing and Engineering, Univ. Missouri Kansas City, A.N. CARUSO, Department of Physics, University of Missouri Kansas City — Hybrid vehicle technology seeks to reduce the total energy consumption used for vehicle locomotion by recovering and reutilizing kinetic energy that is otherwise unrecovered or dissipated in conventional vehicle deceleration. The goal of the work is to determine the transduction mechanisms that work towards a Carnot efficiency without considering constraints or limitations placed by cost or materials. Specifically, this talk will present ideal thermodynamic models of energy exchange between mechanical, electrostatic, electromechanical and electrochemical devices with a goal of projecting an ideal hybrid vehicle.

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