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Experimental Demonstration of a Representative Rotary Motor and Linear Actuator Using Controlled Turn-less Structures Arrays Motors (CTM)

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We describe the experimental demonstration of a linear actuator and cylindrical motor which utilizes the controlled turn-less motor (CTM) principle discussed elsewhere in this conference. The technology combines low voltage high current inverters with turn-less electro mechanics and high power density batteries and micro channel coolers resulting in extremely high force density and power density electro mechanical devices.

A key element of the development is the design and construction of the extremely compact inverters and their integration into complete electro-mechanical devices such as motors and actuators. The complete motor control system which includes the MOSFETs, H-bridge, gate drivers, MCUs, encoder and micro channel cooling will be described and the experimental results will be discussed.

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