

Abstract Submitted
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Review of Two Game Changing Technologies for Space Mission Application PATRICIA RANDAZZO, The College of Idaho — As technology continues to move forward, many new developments and products become available and can be considered for application in NASA's space missions. Two game changing technologies are high temperature superconductors (HTSC) and ionic polymer-metallic composite (IPMC) actuators and sensors. High temperature superconductors are a metal or alloy that can be cooled to above 70 K and are able to conduct an electric flow with zero resistance. Ionic polymer-metal composites actuators and sensors are synthetic composites that display artificial muscle behavior under an applied voltage. By conducting research to review papers, attending lectures and conferences, and interviewing and meeting with developers and researchers many products and applications for specific use in space missions were found. HTSC technology is being integrated into rocket propulsion and acceleration, radiation shielding, energy storage and medical diagnostic tools. IPMC technology is being integrated into extreme environment robotics, avionics and motion detection.

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