

Energy Absorption Strategies for Occupant Protection

The ability to dissipate energy in vehicle systems, especially with the goal of protecting occupants from potentially injurious vibration, repetitive shock, crash and blast loads, is becoming a critical issue as the cumulative impact of these load spectra on chronic health and acutely injury are becoming better understood. The objective of this talk is to discuss what properties are optimal for energy absorption in applications such as impact or shock load mitigation. Two primary strategies will be discussed in this talk: passive vs. semi-active energy absorbers. The first topic is the use of crushable materials to absorb energy. Two classes of passive materials will be discussed for various applications including sintered and composite hollow glass foam materials, as well as elastomeric or plastic cellular materials. The