The science and technology of disordered materials has not proceeded down the ordinary path. Stanford R. Ovshinsky, a self-taught genius who was previously known in scientific circles primarily for his contributions to automation and neurophysiology, began working in the field in 1955, when almost all physicists believed that amorphous semiconductors could not even exist. CFO showed that the overlap between extensive valence and conduction band tails, which arises from positional and compositional disorder, could strongly pin the Fermi level. However, if well-defined mobility edges, as first postulated by Mott, exist, the materials would remain semiconducting and would exhibit what appears to be intrinsic behavior.

A full characterization test campaign has been completed in order to obtain the main material properties and check its suitability for usage as an active material in space actuators. Results of this characterization test campaign have been presented in this work. This new alloy has been proposed for its use as actuators for space mechanisms. One application of SMA technology is an ultra-low-weight rotary actuator that has been developed for operation on Mars. Few people, even in technical areas, recognize the importance of developments such as electronic nonequilibrium properties. Many of these ideas were condensed into a publication for Physical Review well after their successful demonstration. Landmark contributions to science and mechanisms for the origin of the phenomena, and technology are rarely recognized at the time of reached important conclusions about the physical publication. Few people, even in technical areas, nature of the materials at equilibrium and their nonequilibrium properties. Many of these the transistor, the laser, or electrophotography ideas were condensed into a publication for Physical Review well after their successful demonstration. Bibliographic Information. Book Title. Disordered Materials. Book Subtitle. Science and Technology. Authors. Stadford R. Ovshinsky. This book integrates materials science with other engineering subjects such as physics, chemistry and electrical engineering. The authors discuss devices and technologies used by the electronics, magnetics and photonics industries and offer a perspective on the manufacturing technologies used in device fabrication. The new addition includes chapters on optical properties and devices and addresses nanoscale phenomena and nanoscience, a subject that has made significant progress in the past decade regarding the fabrication of various materials and devices with nanometer-scale features.