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Synthesis of Nanosized Silicon Powders and Characterization of Their Electrical Properties WAI SZE CHEUNG, Randolph College, INGO PLUEMEL, HARTMUT WIGGERS, Institute for Combustion and Gasdynamics and CeNIDE — The use of nanosized silicon powders in nanoelectronics and photovoltaics opens the path for new technologies while reducing production costs of existing devices like solar cells. However, the electrical properties of such systems are not yet fully understood. In this research, nanosized silicon powders with varying particle size and dopant concentration were synthesized in a low pressure reactor. The current-voltage relationship of the powders was then characterized by the means of cyclic voltammetry while applying a uniaxial pressure. It has been observed that the resistance of nanosized silicon powders increased over time after applying a force ranging from 10kN to 80kN. Cyclic voltammetry was used to track the non-linear change in resistance during the compression.

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