In recent experiments, highly purified batches of single-wall carbon nanotubes (SWCNTs) have shown promise as superior alternatives to the graphitic carbon-black anode materials heretofore used in rechargeable thin-film lithium power cells. The basic idea underlying the experiments is that relative to a given mass of graphitic carbon-black anode material, an equal mass of SWCNTs can be expected to have greater lithium-storage and charge/discharge capacities. The reason for this expectation is that whereas the microstructure and nanostructure of a graphitic carbon black is such as to make most of the interior of the material inaccessible for intercalation of lithium, a batch of SWCNTs can be made to have a much more open microstructure and nanostructure, such as to make SWCNTs much more accessible for the storage of lithium. Specific Capacity of a carbon-nanotube anode material as a function of cycle number was calculated from charge and discharge times measured in galvanostatic cycling.

In accordance with Public Law 96-517, the contractor has elected to retain title to this invention. Inquiries concerning rights for its commercial use should be addressed to:

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