formed by these algorithms, presumed to be correct, would be compared with the corresponding real-time conversions. Incorrect real-time conversions would be updated using the correct conversions.

This work was done by Mark James of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*

The software used in this innovation is available for commercial licensing. Please contact Karina Edmonds of the California Institute of Technology at (626) 395-2322. Refer to NPO-42515.

Anion-Intercalating Cathodes for High-Energy-Density Cells

A report discusses physicochemical issues affecting a fluoride-intercalating cathode that operates in conjunction with a lithium ion-intercalating anode in a rechargeable electrochemical cell described in a cited prior report. The instant report also discusses corresponding innovations made in solvent and electrolyte compositions since the prior report. The advantages of this cell, relative to other lithium-ion-based cells, are said to be greater potential (5 V vs. 4 V), and greater theoretical cathode specific capacity (0.9 to 2.2 A-h/g vs. about 0.18 A-h/g). The discussion addresses a need for the solvent to be unreactive toward the lithium anode and to resist anodic oxidation at potentials greater than about 4.5 V vs. lithium; the pertinent innovation is the selection of propylene carbonate (PC) as a solvent having significantly more stability, relative to other solvents that have been tried. The discussion also addresses the need for an electrolyte additive, denoted an anion receptor, to complex the fluoride ion; the pertinent innovation is the selection of tris(hexafluoroisopropyl) borate as a superior alternative to the prior anion receptor, which was tris(pentafluorophenyl) borate.

This work was done by William West of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*

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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Refer to NPO-42316, volume and number of this NASA Tech Briefs *issue, and the page number.*