



**Alan C. West**

Columbia Electrochemical Energy Center  
Department of Chemical Engineering  
Columbia University, New York, NY 10027

## **Studies of Transport Processes in Li-Ion Cathodes**

### **Abstract**

Batteries are complex, with important phenomena arising from multiple length scales. Advances thus require multiscale experimental inquiries, and mathematical models, including multiscale models, may be employed to design, analyze and integrate studies. In early-stage research efforts, close collaboration with experimental efforts may result both in dramatically improved model fidelity and in more optimal utilization of experimental resources. We present approaches to augment physics-based models of Li-ion cathodes with statistical methodologies. Several examples are illustrated.

### **Bio**

Alan West received his PhD in Chemical Engineering from the University of California and his BS from Case Western Reserve University. He is the co-director of the Columbia Electrochemical Energy Center and is the Samuel Ruben-Peter G. Viele Professor of Electrochemistry, with appointments in the Department of Chemical Engineering and the Department of Earth and Environmental Engineering. His research interests include batteries, electrochemical synthesis, and fuel cells.