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Electrochemistry for Energy Conversion¹

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Imagine a laptop computer that runs for 30 hours on a single charge. Imagine a world where you plug your *house* into your *car* and power lines are a distant memory. These dreams motivate today's fuel cell research. While some dreams (like powering your home with your fuel cell car) may be distant, others (like a 30-hour fuel cell laptop) may be closer than you think. If you are curious about fuel cells—how they work, when you might start seeing them in your daily life— this talk is for you. Learn about the state-of-the art in fuel cells, and where the technology is likely to be headed in the next 20 years. You'll also be treated to several “behind-the scenes” glimpses of cutting-edge research projects under development in the Renewable Energy Materials Center at the Colorado School of Mines— projects like an “ionic transistor” that works with protons instead of electrons, and a special ceramic membrane material that enables the “uphill” diffusion of steam. Associate Professor Ryan O'Hayre's laboratory at the Colorado School of Mines develops new materials and devices to enable alternative energy technologies including fuel cells and solar cells. Prof. O'Hayre and his students collaborate with the Colorado Fuel Cell Center, the Colorado Center for Advanced Ceramics, the Renewable Energy Materials Science and Engineering Center, and the National Renewable Energy Laboratory.

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