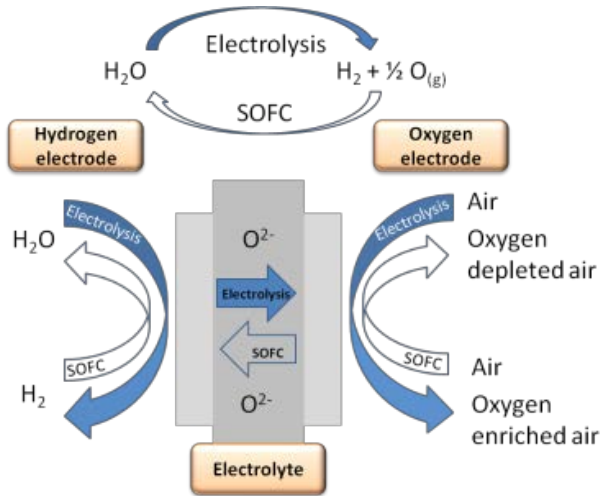
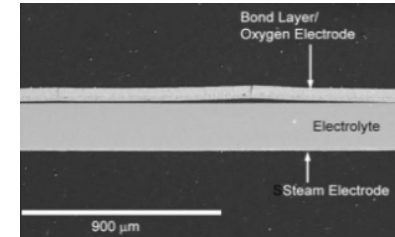


John Druce, Helena Tellez-Lozano, John Kilner and Tatsumi Ishihara
(wpi-I²CNER, Kyushu University)

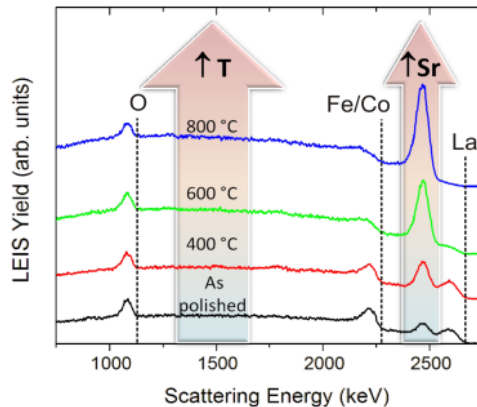
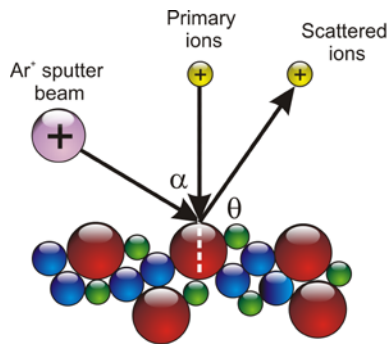


- Utilise excess renewable energy to drive electrolysis of water
- Reversible
- Efficient
- Co-electrolysis for other useful products



- System problems at high operating temperatures (800 – 1000 °C)
 - Reduce to around 500 °C
- High degradation rates
 - Failure at high current densities
- **Lack of fundamental understanding of processes controlling performance and durability**

Surface composition and performance of solid oxide electrode materials



Development of new electrode materials

- Tailored for SOEC operating conditions
- Fundamental studies of oxygen diffusion and incorporation

