Session III

- Choice of buffers is important –must be matched with substrate
- Structural compatibility, thermal stability, chemical stability, barrier diffusion
- Need better characterization of material properties oxygen and metal difussion
- Quanxi Jia
  - STO and SRO have clean interfaces with IBAD MgO
  - SRO results in better in-plane texture for YBCO than other materials
  - 2.3 MA/cm2 (320A) 0n SRO/MGO(IBAD
  - 4.9 MA/cm2(230 A) with EBCO
  - Buffer layers may be able to heal defects in substrates or lower layers – not understood
  - CeO2 cap layer needed for MOD process – not compatible with SRO
  - Ru cost is high, but little material used

- Dave Christen
  - Cu substrate – 6x lower cost than Ni
  - With conductive buffer layer, no need for stabilizer
  - Problems are oxidation and mechanical properties – need stronger Cu alloy\MgO good O2 barrier but not Cu barrier TiN better Cu barrier
  - 1 MA/cm2 with YBCO/LMO/Ni/Cu
  - Can use Ni overcoat but : too much Ni – magnetic; too little Ni – oxidation

Sessen III

- Parans Paranrhaman
  - LMO demonstrated as single buffer layer, LZO deposited by MOD process
  - LMO and LZO may be good Ni barrier due to La2NiO4 formation

- Todd Polley
  - MCT process deposits buffers on NiW, efforts focused in improving properties and rates