

## Einladung zum V O R T R A G

### »Much ado about nothings: the behaviour of oxygen vacancies in SrTiO<sub>3</sub> Materials«

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There is renewed interest in the behaviour of point defects in bulk SrTiO<sub>3</sub> and at its extended defects due to the material's possible application in all-oxide electronics and as a memristive device. The combination of <sup>18</sup>O/<sup>16</sup>O exchange and Secondary Ion Mass Spectrometry (SIMS) analysis constitutes a powerful tool for probing the behaviour of oxygen vacancies in oxides. In this contribution, after a brief introduction to the technique and its capabilities and limitations, I demonstrate the application of this method to investigating the behaviour of oxygen vacancies in SrTiO<sub>3</sub> and at its extended defects (dislocations, surfaces, hetero-interfaces). Three systems will be examined: (1) single crystal SrTiO<sub>3</sub> substrates; (2) low-angle grain boundaries in SrTiO<sub>3</sub> comprising periodic arrays of edge dislocations; and (3) thin films samples. In general, I will emphasize the need to combine experimental and computational approaches, and I will draw attention to current challenges and outstanding problems.

- **Dienstag, 02.05.2017**
- **15:00 s.t.**
- **HS H**