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Understanding diffusion in complex oxides and at their extended defects

After a brief introduction to some of the diffusion basics, I will begin by reviewing diffusion data reported in the literature for strontium titanate, SrTiO_3 , as a model perovskite-type oxide and for yttria-stabilised zirconia, $\text{Zr}_{1-x}\text{Y}_x\text{O}_{2-x/2}$ as the prototypical fluorite-type oxide. Mass transport of anions and of cations will be considered, both in the bulk phase and at extended defects (surfaces, grain boundaries and dislocations). In the second part of the talk, I will present recent work that we have been doing on characterizing and understanding mass transport processes in perovskite-structured SrTiO_3 and in fluorite-structured CeO_2 . For the former I will focus on oxygen diffusion in the bulk, across surfaces and along dislocations. For the latter I will focus on cation defect processes in the bulk. In general I will emphasize the need to combine experimental and computational approaches, and I will draw attention to current challenges and outstanding problems.

Der Vortrag findet um **14:30 Uhr** im Gebäude L1 | 08,
Lichtwiese, Jovanka-Bontschits-Str. 2, **Raum 23** statt