

Titanium Halides and Kinfolk

Gerd H. MEYER, ^{a)}

*^{a)} Department of Chemistry, Royal Institute of Technology (KTH), Teknikringen 42, 114 28
Stockholm, Sweden;
gerdm@kth.se*

After the discovery that lead(II) halide perovskites, for example CsPbBr₃ and derivatives, can play an important role in solar cell technology, many laboratories around the World are vigorously performing research aiming at substitutes and better performing inorganic or inorganic/organic hybrid compounds. Starting with a report on Cs₂[TiBr₆], a survey of binary, ternary and higher complex titanium halides in the oxidation states +4, +3, +2 as well on mixed-valence halides and compounds with an undefined oxidation state of titanium is given. Most of the highlighted compounds have been synthesized and structurally characterized by my students during my career at the Universities of Gießen, Hannover and Ko ln (Cologne). Neighboring elements, titanium's kinfolk, are included in the survey, almost all of the early transition metals up to group 7, with a special emphasis on cluster compounds. The survey ends up with a remark on Cs₂[{Mo}₆I₁₄], a dark red cluster complex compound which can act as a light harvester in all-inorganic solar cells.