Chikh-Afir Houria, Int J Mater Sci Res. 2017
http://dx.doi.org/10.18689/2638-1559.a1.004

Radio-Crystallographic Study of Titanium Sesquioxide at High Temperature and Vacuum

Chikh-Afir Houria
Unversity des Siences et de la Technology Houari Boumediene, Algeria

High-temperature X-rays diffractometry is used to study Ti_2O_3 rhombohedral oxide formed by reduction of titanium dioxide, under vacuum and in the presence of graphite or metallic titanium. The sesquioxide is charac- terrized by a homogeneous field of very low oxygen pressure, both boundary phase appearing independently from one another between 800 and 1715°C. The c/a = 2.660 value for $Ti_{2-x}O_3$ oxidized from of the equivalent hexagonal cell reaches c/a = 2.735 for Ti_2O_3 reduced form, which does not undergo quenching (c/a = 2.640 at room temperature)