






特長 Characteristics

- 独自技術により、微粒子化した低次酸化チタン
Substoichiometric Titanium Oxide fine particle made from SAKAI's original techniques

低次酸化チタンとは？

Ti⁴⁺よりも低次のTiを含む、組成式TiO_x (0 < x < 2)で表される低次酸化チタンの総称
The Titanium Oxide having ionic valence lower than Ti⁴⁺, represented by the compositional formula TiO_x (0 < x < 2)

種類 Line Up

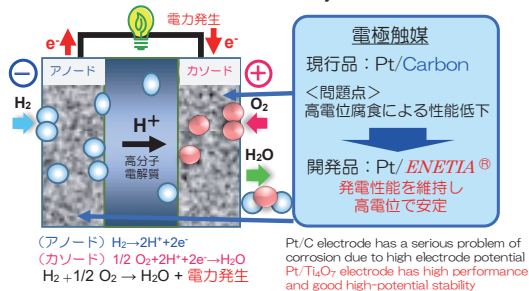
	TiO _{2-δ}	Ti ₄ O ₇	Ti ₃ O ₅	Ti ₂ O ₃	Ti(O ₊) _α
粉体概観 Powder Appearance					
体積抵抗 Volume resistivity (Ω cm)	10 ⁶ ~ 10 ⁷	10 ¹ ~ 10 ⁻³	10 ⁰ ~ 10 ⁻¹	10 ⁻¹ ~ 10 ⁻²	10 ⁻¹ ~ 10 ⁻²
SSA (m ² /g)	~ 1	~ 15	~ 1	~ 10	~ 40

電池材料、蓄熱材料、顔料などへの応用が期待できます
Expected for these uses : Battery, Electrode, Heat storage, Pigments etc.

用途例：PEFC (固体高分子形燃料電池) 電極材料 (Ti₄O₇) Electrode catalyst for PEFC (Polymer Electrolyte Fuel Cell) : Ti₄O₇

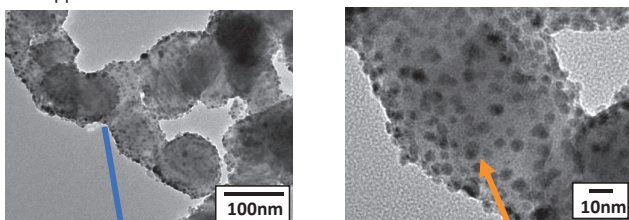
PEFCの原理図と電極触媒

The mechanism of PEFC and electrode catalyst



TEM像

低次酸化チタン ENETIA® にPtを担持
Pt supported on Substoichiometric Titanium Oxide "ENETIA"

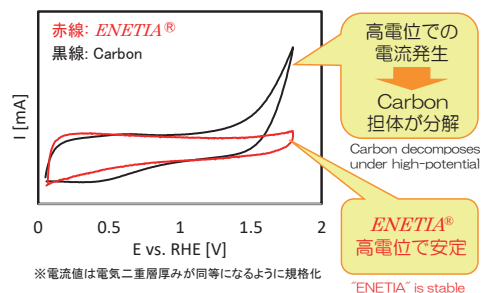


連結粒子構造
Chain like structure

Pt

担体の高電位安定性(RDE-CV評価)

High-potential stability of ENETIA and Carbon support(RDE-CV)



Pt担持触媒のI-V特性(MEA評価)

I-V curves (Pt/ENETIA, Pt/C used for MEA anode)

