

化学状態を「分光」する触媒サイト構造解析の最前線

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高活性で高選択性な触媒についての最大の関心事は、活性サイトを特定し、その反応性軌道が反応分子をいかに活性化するかの核心だろう。高輝度放射光を利用すれば、サイトの化学状態を「分光」するが如く *in situ* 構造解析が行なえる。摂動に応答する触媒反応性軌道からの蛍光線を分光し、表面触媒反応遷移状態に迫る。

高輝度放射光（SPring-8）と環境触媒

高輝度・高感度を生かすためには

- (1) 活性サイトについての厳密な分析（ピーク分離、微量成分抽出）
- (2) 高エネルギー領域 (> 20 keV) での X 線利用分析
- (3) 高輝度放射光（SPring-8）ならではの、状態や反応性軌道を識別した活性サイト分析

高輝度放射光 (SPring-8) と環境触媒

環境触媒について分析するためには

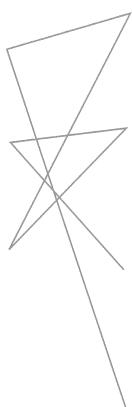
(1)複雑な反応条件でのその場 (in situ) 分析

このワークショップで御紹介する内容

高輝度放射光を生かした技術
環境触媒系

選択酸化用V-TiO₂
選択水素化用Pt-Sn触媒

環境中微量有毒Pb, As
除去用層状化合物



ピーク分離、微量成分抽出

高エネルギー領域 (> 20 keV)
での分析

高輝度放射光 (SPring-8) ならではの、
状態や反応性軌道を識別した
活性サイト分析

複雑な環境反応条件でのその場分析

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