

京都大学 構造材料元素戦略研究拠点セミナー

日時： 2014年11月20日（木）13:30～15:00
場所： 京都大学 工学部物理系校舎（吉田キャンパス）
5階材料工学セミナー室（527室）

講演者： **Prof. Vaclav Paidar**
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講演題目： "**What Types of Stacking Faults and Dislocation
Dissociations Can Be Found in Transition-Metal Disilicides**"

Abstract :

The structures of transition-metal disilicides are constituted of different stacking of identical atomic planes at four different positions A, B, C, D. In comparison with the FCC lattice with the ABC atomic plane stacking along the $\langle 111 \rangle$ direction, the occurrence of the fourth position, D, essentially alters the properties of defects and consequently the mechanical properties. The effect of generalized planar defects and their impacts on the dislocation core structures will be discussed for three structures: C11b, C40 and C54. In particular, we examine stacking faults and related partial dislocations on the basal planes in different types of disilicides as well as the related dissociated dislocations. Our analysis of the stacking-fault-like defects is based on the calculations of γ -surfaces using ab initio methods.

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