

北海道大学 大学院工学研究院 材料科学部門主催

# 第 105 回マテリアルセミナー

下記の要領で第 105 回マテリアルセミナーを開催いたします。多数ご参加くださいますようお願い申し上げます。

## 記

日時：平成 29 年 8 月 1 日（火）9 時 40 分 ～ 10 時 20 分

場所：北海道大学工学部 材料化学棟中会議室（MC102）

講師：Dr . Joonho Lee

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題目：Computational Thermodynamics on Developing Earthquake Resisting High-Strength Reinforcing Steel Bars

Abstract: Due to rapidly increasing earthquake damage, seismic design construction becomes more important than ever. Especially, reconstruction of old town in Korea requires high-rise and seismic design construction, many attentions have been paid to high strength seismic reinforced steel bar. In the present presentation, alloy design based on computational thermodynamic is introduced for developing next-generation seismic reinforced steel bars. On the other hand, it is considered that grain size refinement by the controlled rolling and low-temperature transformation structures formed by the accelerated cooling are effective to obtain acceptable mechanical properties with high strength. Finite element simulation analysis is also useful to understand plastic deformation by rolling, internal and external heat transfer, and corresponding phase transformation of austenite phase to various low-temperature transformation structures. This presentation shows how computational thermodynamics is practically applied to manufacturing and our daily life.

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