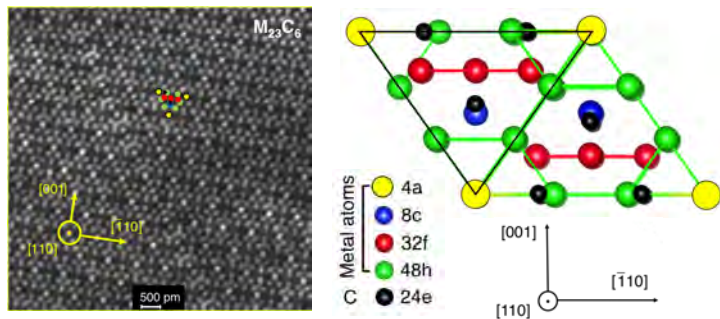


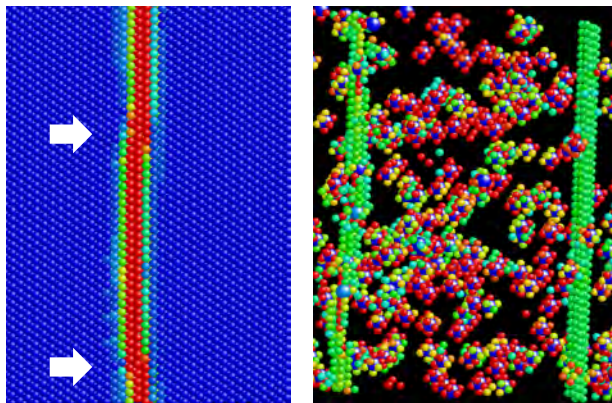
GL:Ryoji SAHARA, Masato SHIMONO,
Ikuo OHNUMA, Taichi ABE, Machiko ODE,
Tetsuya MATSUNAGA

Object: To predict the properties of structural materials by performing multiscale simulations.

Nano-Scale : First-principles,
Molecular Dynamics, TEM observation.

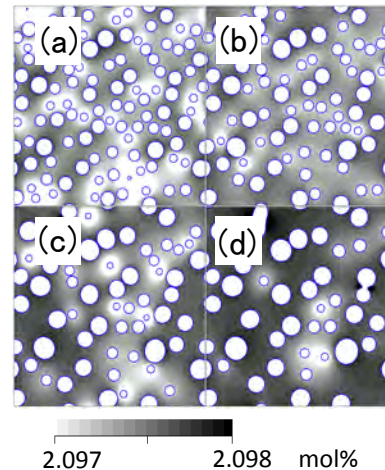


Thermodynamic stability and precipitation strengthening mechanisms of carbides in high temperature steels.



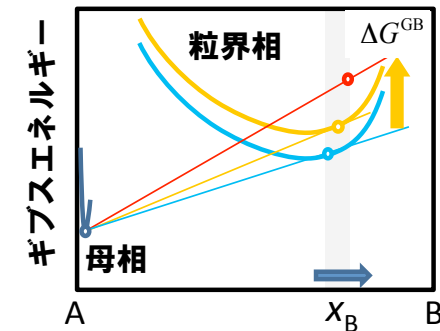
Interaction between screw dislocations and solute elements in bcc-V: Strain energy decreases by screw dislocations binding to solute elements.

Macro-Scale : CALPHAD, Phase-Field Simulation.

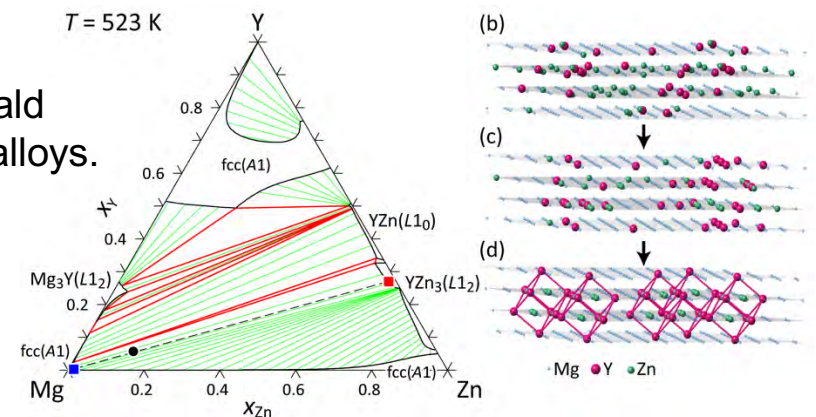


(a) 1.0 (b) 20.0
(c) 40.0 (d) 60.0 sec

Prediction of Ostwald ripening in Cu-Au alloys.



Development of a CALPHAD-based grain boundary segregation model.



Thermodynamic origin of solute-enriched stacking-fault in dilute Mg-Zn-Y alloys.