

Connection and Execution of Prediction Modules Using the MI Workflow System

Kaita Ito*, Satoshi Minamoto, Takuya Kadohira, Makoto Watanabe and Masahiko Demura

National Institute for Materials Science 1-2-1 Sengen, Tsukuba, Ibaraki 305-0047, Japan.

Corresponding Author: Kaita Ito. Email: ITO.Kaita@nims.go.jp.

In the Materials Integration (MI) system, workflow designers and players are implemented as ones of the core subsystems. When the user wants to predict a certain material parameter by using the MI system, the user selects a prediction module in the workflow designer that can output the objective parameter. If the all required input parameters of the prediction module are not given directly, further modules can be connected.

Each input and output parameters of the prediction module on the MI system is directly associated with one term of material science and engineering. It is not defined as a specific data or file format. These terms are managed by the vocabulary-inventory system which is another core subsystem. Therefore, the workflow designer can judge the connectivity of the prediction modules, and can propose another module that can be connected to a certain module. In this way, prediction workflows can be created and modified very easily, and such flexibility is a major advantage of the MI system.