Establishment of descriptors-inventory for data-utilization in Materials Science and Engineering with collective intelligence

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ABSTRACT

We propose a scheme to construct systems of data-inventory for research and development of materials with data-utilization. The inventory system provides uniform management for "descriptors", which are calculable or easily observable quantities of materials. By the scheme proposed, the list of descriptors with persistent identifiers will be created using collective intelligence, i.e. more than one user can register descriptors used in his/her research by organizing his/her own documents such as data-schema, notes and so on, while the system will automatically collect and unify all of the registered descriptors. In this talk, we introduce a simple example for implementation of the scheme using a typical wiki engine for collaborative editing with a function of hierarchical keyword management. We will also discuss a potential of the scheme to establish an unified ontology for data-integration from scattered data-sources, which will lead acceleration of data-utilized research in the field of Materials Science and Engineering.