

**(KRICT-Virtual Engineering Platform) Digital transformation of material/part  
development using Data/AI/Simulation**

**(화학연·가상공학플랫폼) 데이터·AI·시뮬레이션을 활용한 소재·부품 개발 디지털 전환**

명진석

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The Chemical Materials Solutions Center of the Korea Research Institute of Chemical Technology(KRICT) is developing a virtual engineering platform for the digital transformation of development of functional plastic materials and parts. The virtual engineering platform consists of database, AI and numerical simulation. The database has been built through the standardization of vocabulary, classification and database schema. Machine learning techniques are applied to the dataset to build the property prediction models. For engineering applications, Computer Aided Engineering(CAE) analysis is used for performance evaluation and process optimization of parts, and virtual testing SW for material property analysis and modeling. This will allow a complete material/part development process in a virtual environment by enabling developers to examine the mechanical and rheological behavior of complex industrial materials and apply them to the process/performance prediction of parts. In this talk, the outline, functions, development cases, and future direction of the virtual engineering platform will be described.