Intelligent search engine for finding optimised rubber compounds



General information







Project duration: 01.06.23 - 31.05.26

Material categories

Polymers: Rubber compounds

Application areas

Process optimization: Improved characterization of mixing process

Material prediction: Prediction of the product properties which are connected to the raw materials and processing parameters

Improved information along life cycle: Development of an intelligent search engine

Product Lifecycle

Raw materials: Rubber, fillers (active, inactive), oils and additives Refining/Processing: Mixing process, extrusion and injection molding

Product development: final product properties

Aspects of digitalization

Semantic Interoperability

Procedures for ontology development

(with integration to top level ontologies): We are contributing to the PMDco semantic modelling patterns that will be used for Abox and TBox modelling across all PMD projects. We also refine and extend the DIGIT RUBBER ontology and merge it with the new PMDco 3.0.

Levels of structured data handled

Ontologically described data (RDF data): In a use case we attempt to demonstrate that data existing in a relational database can be described in RDF/OWL using the patterns we develop.

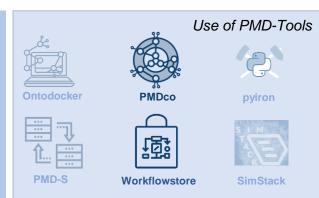
Data-federation

IT Architecture

With project partners: Central platform connected to local systems and databases of the partners. Masking and filtering of the data that is synchronized via the cloud.

Software user interface

Desktop app: based on MAT-AI Software



Community

Follow-up project of DIGITRUBBER: https://material-digital.de/project/12



Full project information

https://materialdigital.de/download/2024-09-10_InSuKa_Projektubersicht.pdf