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ONTOLOGY BASED MATERIALS MODELLING, OPTIMIZATION AND DESIGN APPLIED TO MODELLING TRANSLATION SERVICES AND BUSINESS DECISION SUPPORT SYSTEMS

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ABSTRACT

Involving and adapting materials modelling in European industries is the focus of the materials modelling community in general and in particular of the European Materials Modelling Council (EMMC). Materials modelling is considered as a European Science & Technology strength, but the transfer of this strength to industry lacks behind, hampering the realization of its full economic impact potential [1]. Two important interrelated concepts developed on a European level in many projects focus on overcoming these obstacles: Translation and Business Decision Support Systems (BDSS). While the Translation concept points towards the translation of industrial technological challenges, a BDSS combines the answers of modelling workflows with business measures in order to support actionable decisions taken by industrial decision makers. Moreover, the materials modelling market places provide translation utilisation services for all stakeholders.

The goal of the Minisymposium is to demonstrate and discuss the potency and benefits for European industry and academia to develop and use ontology-based materials modelling and its application to computational materials science, structure design, optimisation and applied/ industrial research. Moreover, the application of the ontology-based approach to Translation and BDSS utilization will discussed by examples from running EU projects. The topic covers actual and actively developing focusing areas of the EMMC.

The Minisymposium is relevant for multidisciplinary researchers working in industry and academia targeting different industrial sectors on the one hand. On the other hand, open research questions will be discussed which call for an uptake by researchers working in basic research areas related to materials modelling.

REFERENCES

[1] Anne F. de Baas, “Review of Materials Models (RoMM): What makes a material function? Let me compute the ways”, (2017).