

# The role of materials data in process models and current practice of their integration

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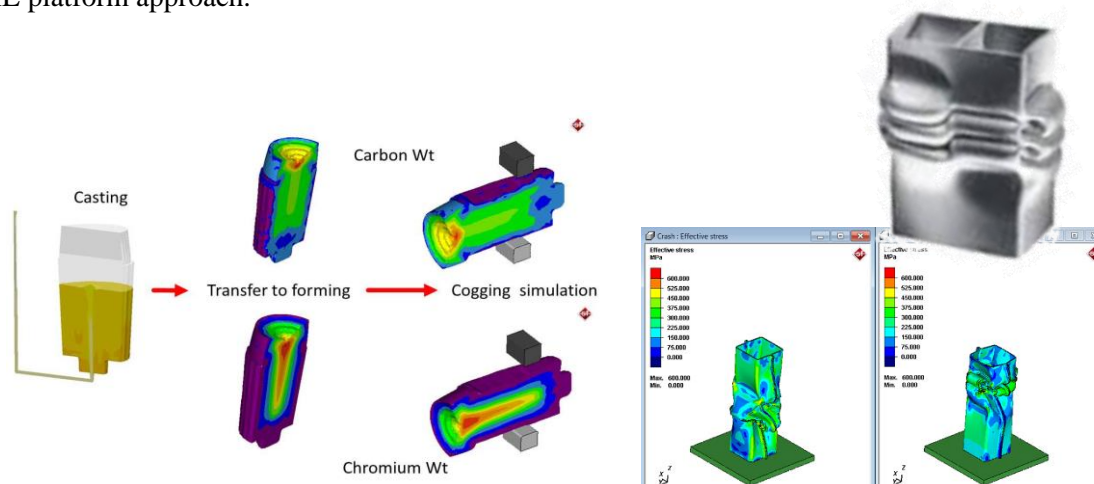
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## ABSTRACT

Appropriate material data are doubtless the most important key to success for virtual process development. But in reality most users of simulation tools – except the academic user community – do not question material data critically enough. They rather use other input data, i.e. friction coefficients or other boundary conditions to adapt their simulation results to reality. Commercial users simply expect that material data, coming along with available solutions are suitable for their purposes.

But what makes material data suitable or less useful? How should material data be provided for simulation purposes? What insights a typical industrial user should have with respect to material data selection and usage? To what extend material properties needs to be defined?

The presentation will give exemplarily some more insights into data base concepts, structure and content of material data bases for the simulation of both metal forming as well as welding processes. Two downstream studies are used in order to depict the current practice and the future challenges of providing material data for ICME driven simulation platforms. [1], [2] Furthermore a new platform development is discussed with respect to the vertical integration of heterogeneous simulation tools into an ICME platform approach.



## REFERENCES:

- [1] Hendrik Schafstall, Ingo Neubauer, Ralph Bernhardt, Gabriel Mc Bain: „Virtual Description of Bulk Sheet Metal Forming Processes Considering Multiphase Models Regarding their Adjustment of Product Properties, Proceedings IDDRG 2013, Zurich, June 2-5 2013
- [2] Hendrik Schafstall, Ingo Neubauer, Julian Litzkow: „Einführung in die Prozesskettensimulation mit Simufact am Beispiel einer “Crashbox”, Roundtable 2015, Marburg.