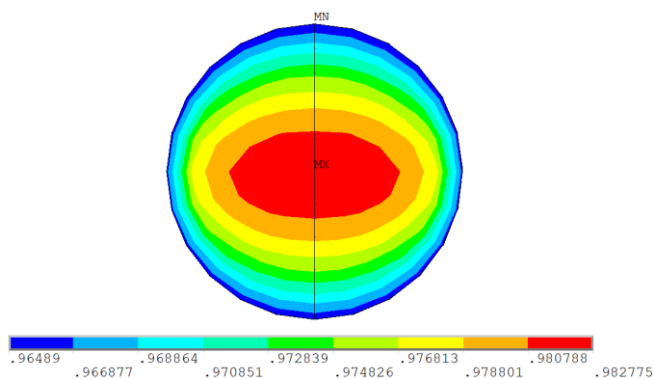
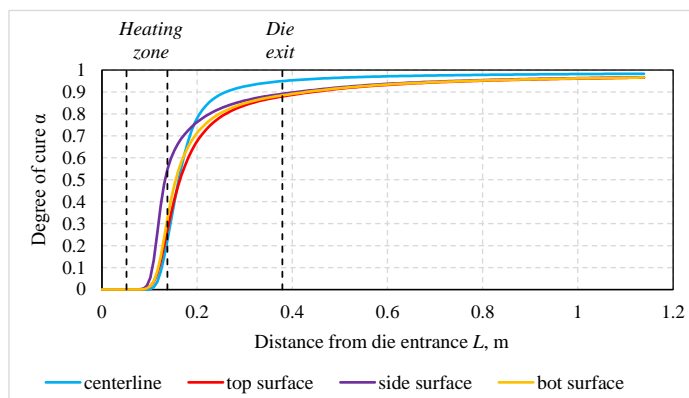
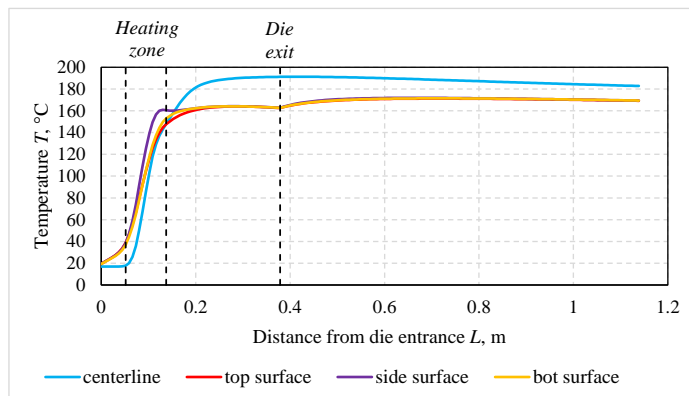
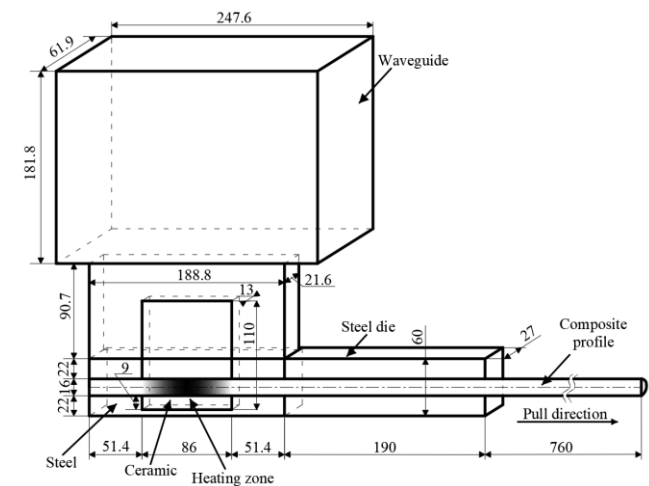


Work stages: Activity 2

Milestone: 5

Milestone name: Finite element models and algorithms for holistic simulation of microwave assisted pultrusion processes

New effective electro-magnetic-thermo-chemical finite element models and algorithms have been developed for a holistic simulation of microwave assisted pultrusion processes by using the general-purpose finite element software that results in considerable savings in development time and costs, and also makes available various modelling features of the finite element package. To evaluate the process induced residual stresses and deformations, thermo-mechanical finite element model and algorithm have been developed additionally.



Degree of cure in the profile cross-section

An application of new high frequency electromagnetic energy source instead of using traditional electrical resistances with high heat losses has allowed, preserving the quality of pultruded profiles, to improve an effectiveness of the corresponding conventional pultrusion process in two times and to increase the pull speed in five times that has contributed to a considerable increase of the process productivity.

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