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MODELING THE HEAT TREATMENT OF A STARCH SUSPENSION INSIDE A TUBULAR EXCHANGER

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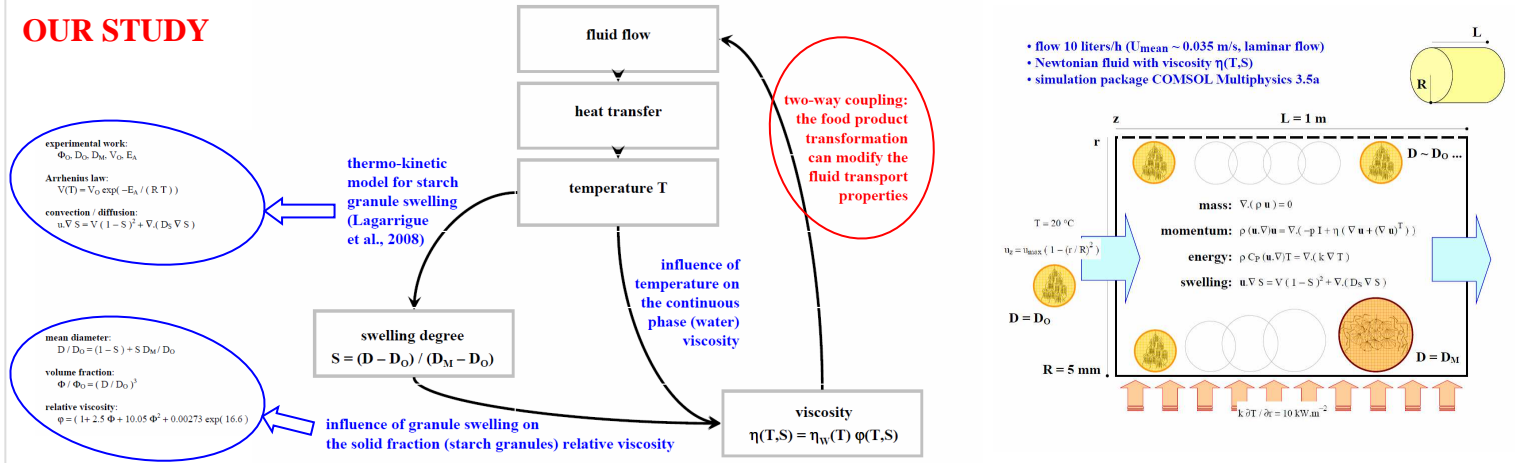
1: AgroParisTech, UMR1145 Ingénierie Procédés Aliments, F-91300 Massy, France

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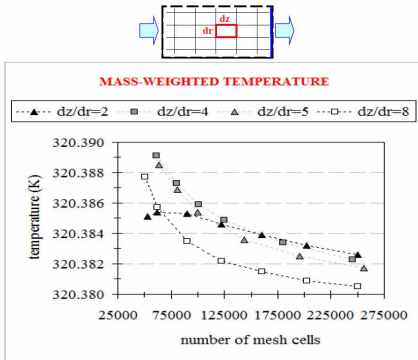
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OUR STUDY

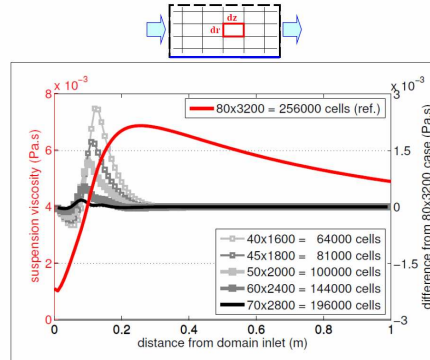


STABILITY OF RESULTS

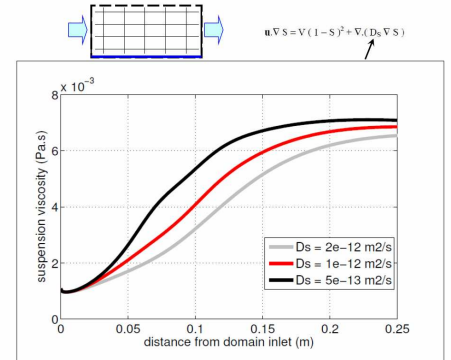
INFLUENCE OF MESH RESOLUTION AT THE DOMAIN OUTLET



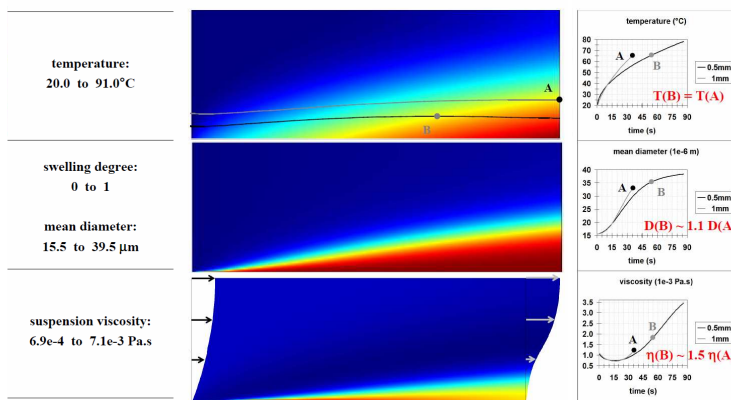
INFLUENCE OF MESH RESOLUTION AT THE HEATING WALL



INFLUENCE OF DIFFUSIVITY AT THE HEATING WALL



MAIN RESULTS



CONCLUSIONS

- + starch granule swelling can be coupled with fluid flow and heat transfer, provided a thermo-kinetic model based upon experimental work
- + thermal histories cannot be neglected in evaluating starch suspension viscosity

PERSPECTIVES

- + other starch suspensions can be similarly studied
- + other transformation processes can be coupled, provided a kinetic-type model
- + fluid flow behavior can be represented with the help of non-Newtonian models