

POLYURETHANE FOAM SYNTHESIS USING SUGAR-BASED DEEP EUTECTIC SOLVENTS

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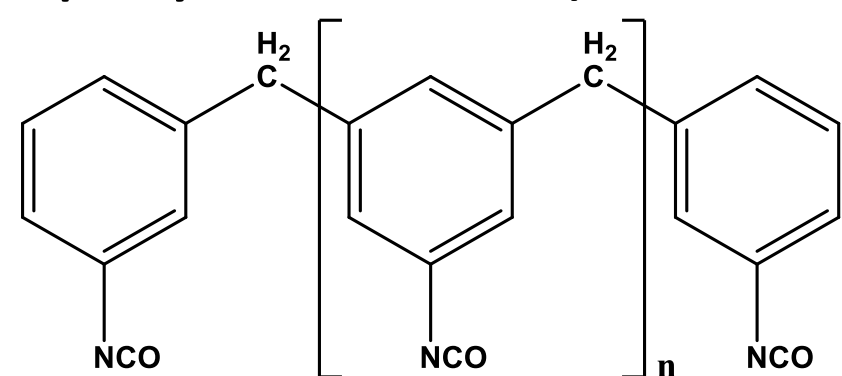
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INTRODUCTION

- The purpose of this research was to prepare **polyurethane foams** which are based on **ionic liquid** (so-called deep eutectic solvents) instead of traditional polyols.
- To prepare the foams **Ongronat 2100** (a polymeric MDI) were used.



- IL systems were made using different sugars (**xylitol**, **fructose**, sucrose, glucose) and **choline chloride**.

CONCLUSION

- The **foams** made so far mostly had a shrinkage-problem and/or collapsed and the structure is brittle.

FUTURE PLANS

- It is planned that other sugars with **higher OH numbers**, for example maltodextrin, dextran and maltitol will be applied to make DES.
- The **replacement of ChCl** should also be considered with reagents which possibly have higher reactivity towards the NCO group such as malic acid.



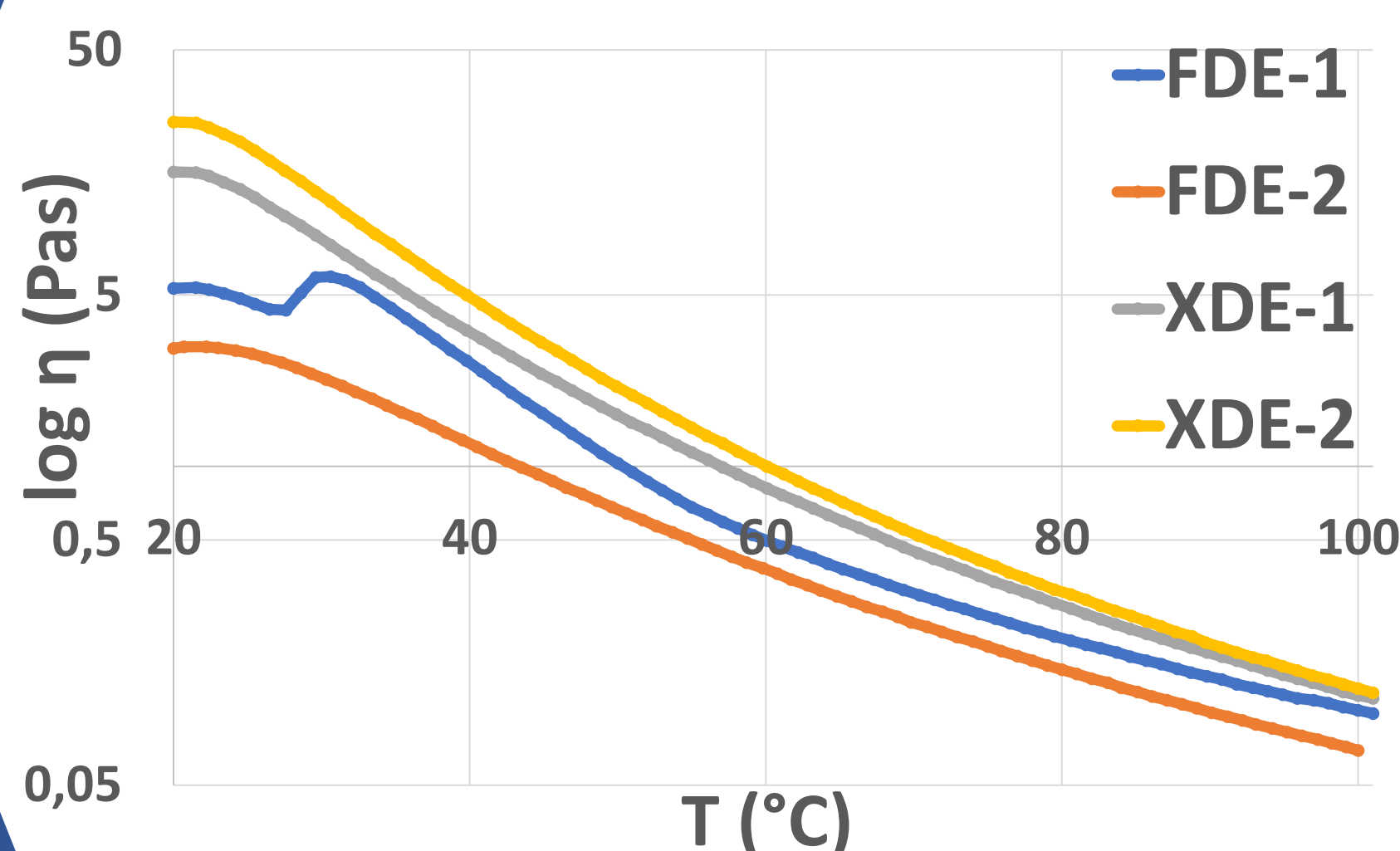
RESULTS

Stable sugar-based Ionic liquids



- Sucrose
- Fructose
- Xylitol

Viscosity of IL as the function of T (°C)



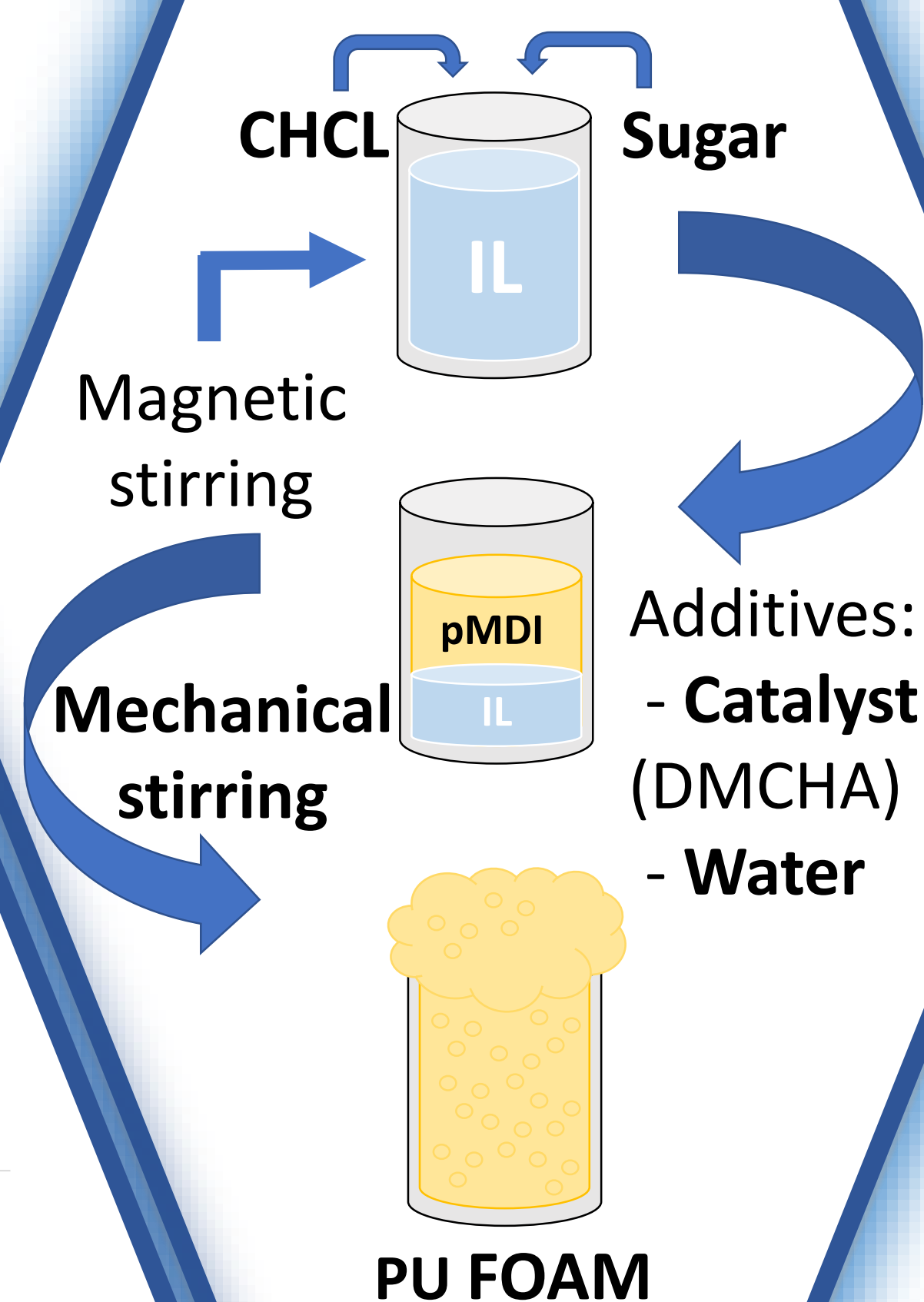
Poliurethane foam from IL based on fructose + Ongronat 2100



FURTHER INFORMATION



METHODS



REFERENCES

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