Bifunctional organosilicon compounds and their potential application

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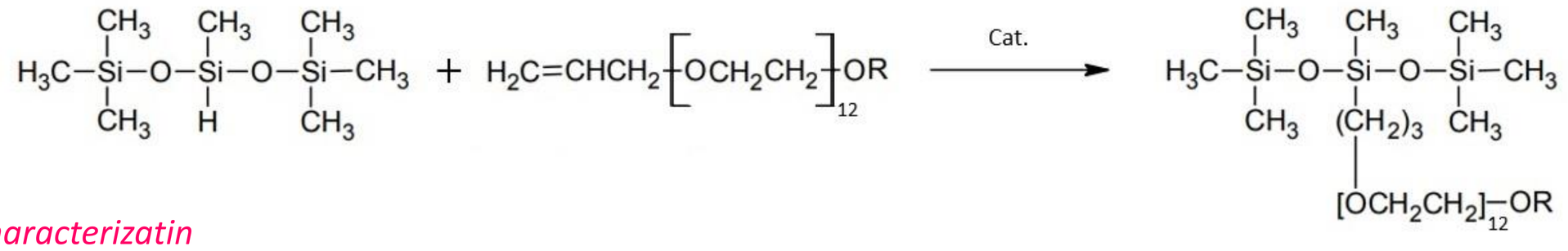
INTRODUCTION

Recently, the group of materials showing amphiphilic properties has become of increasing interest in the global search for materials of specific properties. Compounds with amphiphilic properties are very dynamically developing, multifunctional, because they are a compilation of chemical, biological and physical research. There is a wide range of applications of this group of compounds, mainly in various industries as: washing and cleaning agents, cleaning agents, foaming agents or foam stabilizing agents, dispersing and emulsifying agents or pesticide components (adjuvants). The most important thing is that their specific structure makes them surface active.

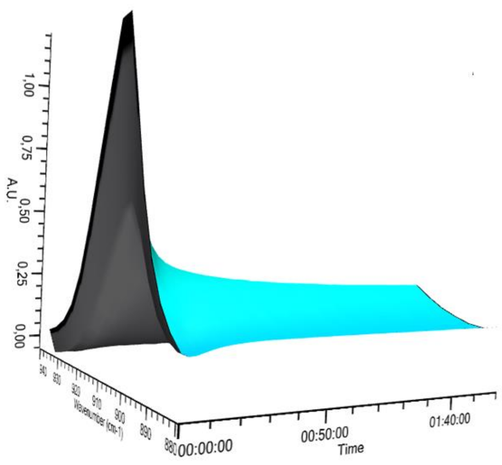
EXPERIMENTAL

Synthesis

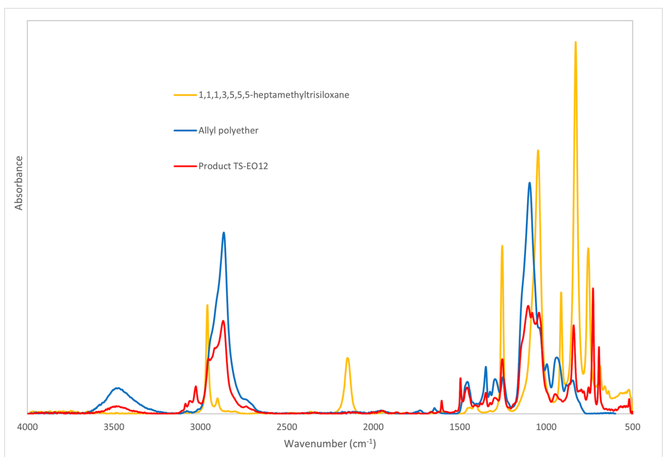


Product characterizatin

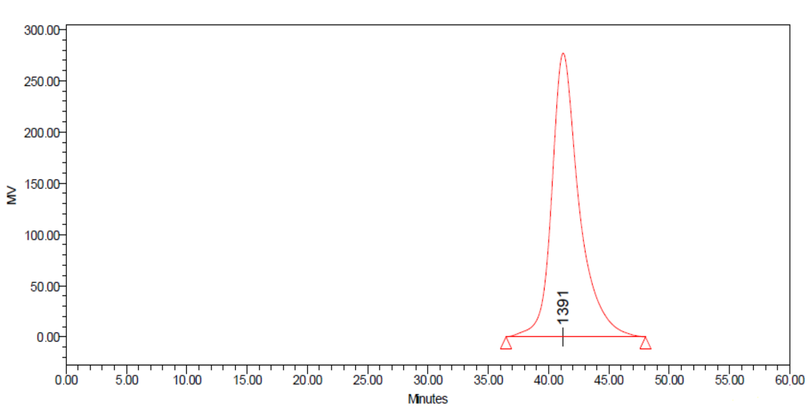
Analysis of real-time FTIR measurements



FT-IR spectrum of the product



The GPC results of the product

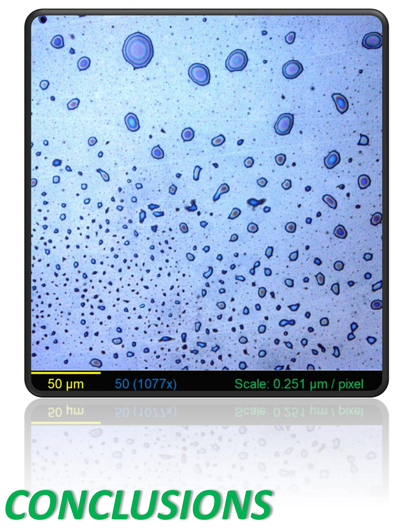


NMR Spectra

^{1}H NMR ($CDCl_3$, TMS) δ (ppm): -0,09 ($-Si(CH_3)_3$); -0.07 ($-SiCH_3$); 0.28 ($-SiCH_2-$); 1.42 ($-CH_2CH_2CH_2-$); 3.23 ($-CH_2O-$); 3.47 ($-OCH_2CH_2-$); 3.53 (-OH); **^{13}C NMR** ($CDCl_3$, TMS) δ (ppm): -0.65 ($-SiCH_3$); 1.59 ($-Si(CH_3)_3$); 13.19 ($-SiCH_2-$); 22.81 ($-CH_2CH_2CH_2-$); 61.32 ($-CH_2O-$); 70.27 (OCH_2CH_2-); **^{29}Si NMR** ($CDCl_3$, TMS) δ (ppm): -21.93 ($Si(CH_3)CH_2$); 7.36 ($-Si(CH_3)_3$).

Potential Application

Surfactant



Self- cleaning

Anti- fogging

Wood protective

CONCLUSIONS

- Effective synthesis of siloxane containing polyether functional group was carried out using hydrosilylation process;
- The product was characterized by spectroscopy method;
- Application tests were carried out using the product as a surfactant and surface modifier [1-3];

ACKNOWLEDGMENTS

The authors acknowledge the financial suport from the National Centre for Research and Development in Poland: LIDER/5/0011/L-11/19/NCBR/2020

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