

SYNTHESIS AND SURFACE PROPERTIES OF AMPHIPHILIC SILOXANE DERIVATIVES

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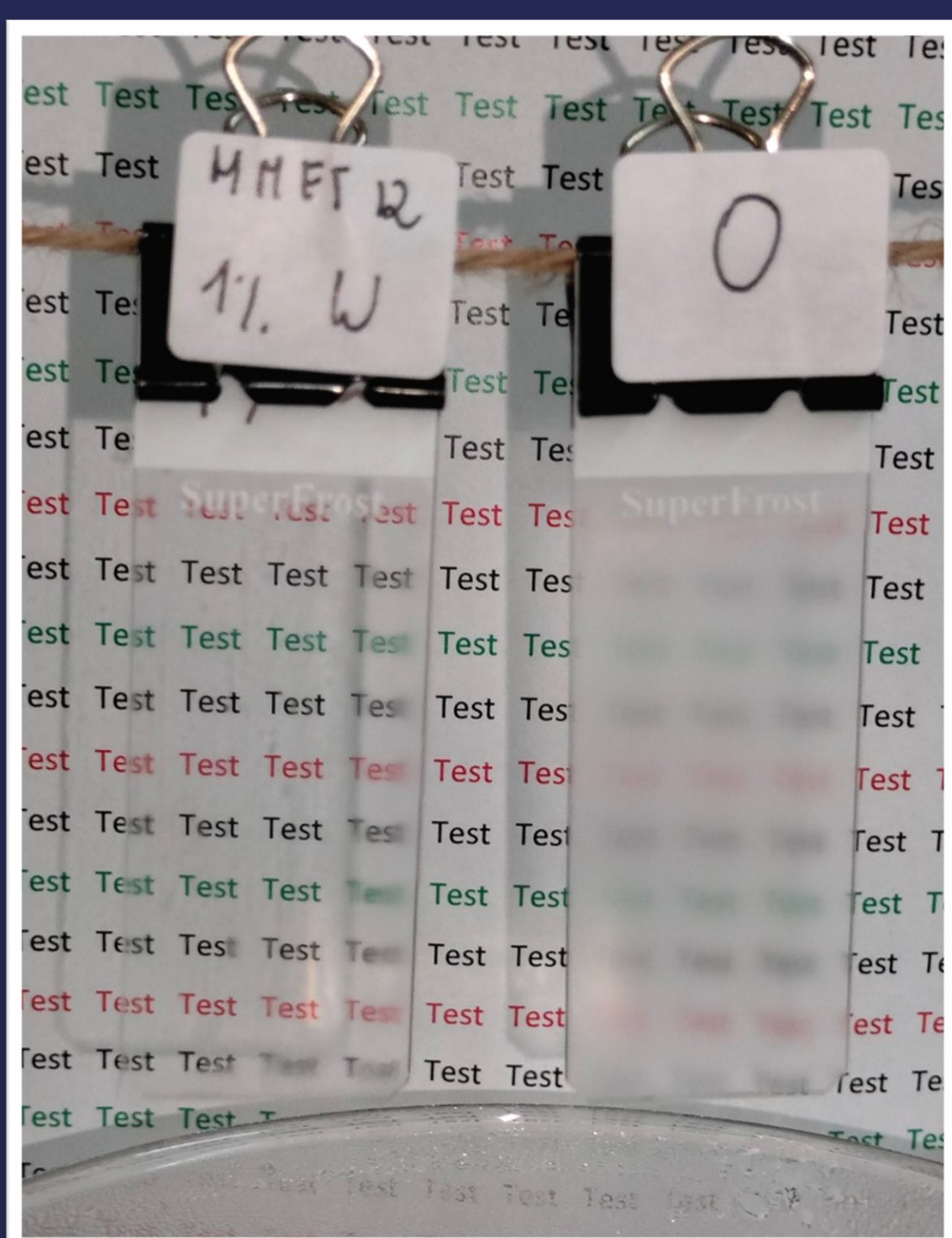
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INTRODUCTION

The group of materials showing amphiphilic properties has become of increasing interest in the global search for materials of specific properties. New materials of strictly defined structure and properties are designed on the basis of results of fundamental studies. 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. They can be used to obtain anti-fouling or self-cleaning protective coatings for example to wood, glass or different building materials.

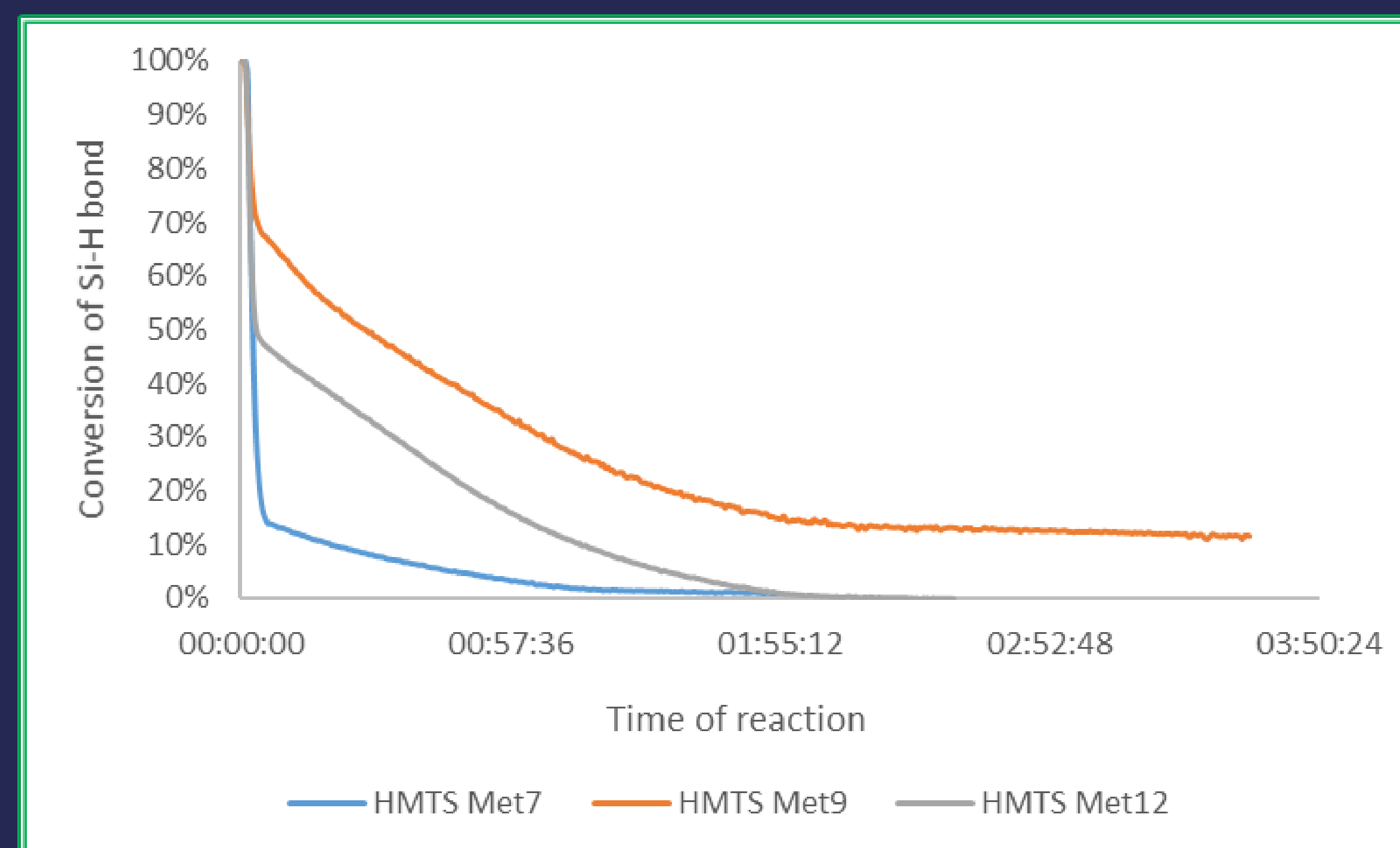
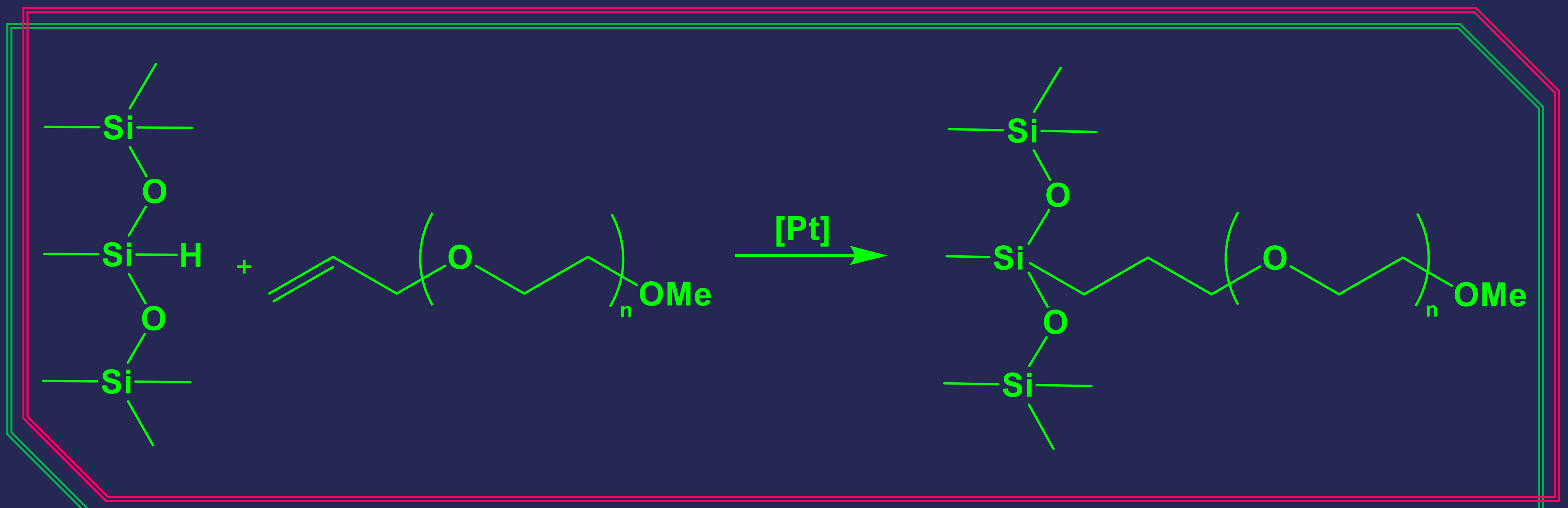
Anti-fogging properties



Wood protective



EXPERIMENTAL



FT- IR in situ spectra

Conversion of Si-H bond in real time. The synthesis of functionalized siloxanes was performed using allyl polyether containing 7, 9 or 12 ethoxy groups with the terminal methoxy group.

CONCLUSIONS

- ✓ The effective synthesis of siloxanes containing polyether functional groups was carried out using hydrosilylation process;
- ✓ The hydrosilylation process was monitored in real time IR spectroscopy ;
- ✓ The all products were characterized by spectroscopy method;
- ✓ The compounds were used to modify the glass surface. Their anti-fog properties were tested;
- ✓ Based on the measured values of the contact angle for model liquids, the surface free energy of glass covered with a film was calculated. On this basis, the effect of the applied method, compound and its concentration on the properties of the layer deposited on the glass surface was evaluated;
- ✓ In each case, the water spontaneously spread over the surface of the glass modified with the adsorption layer;

ACKNOWLEDGMENTS

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