Polysiloxanes functionalized with platinum group metal complexes

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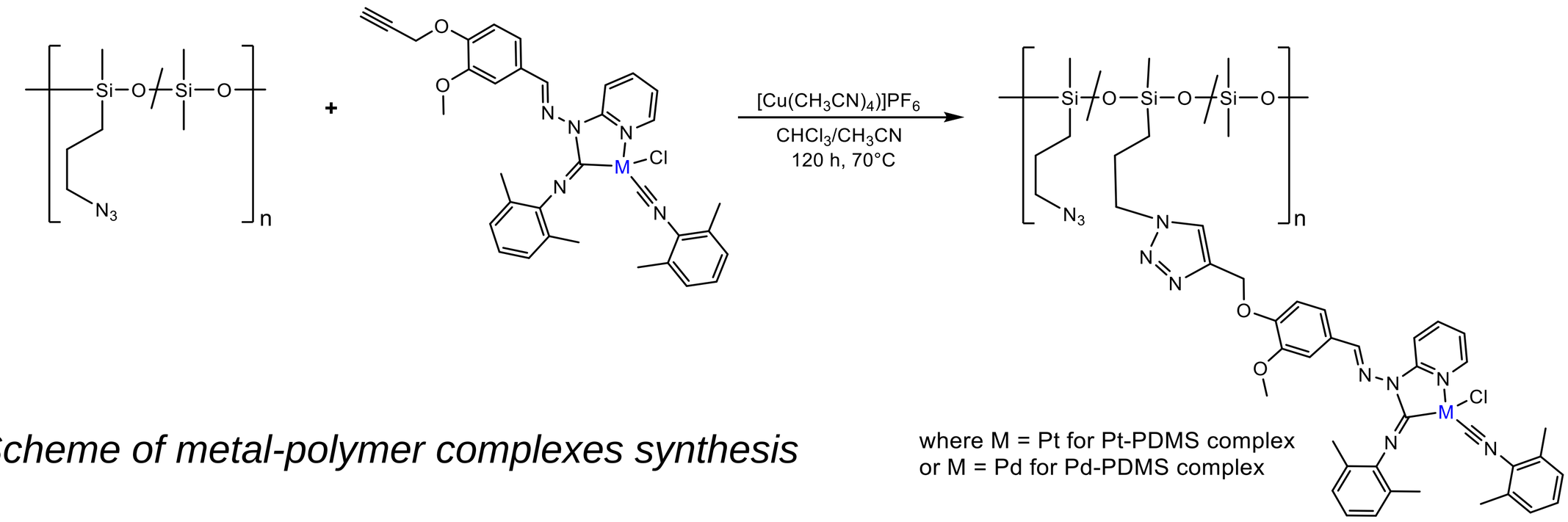
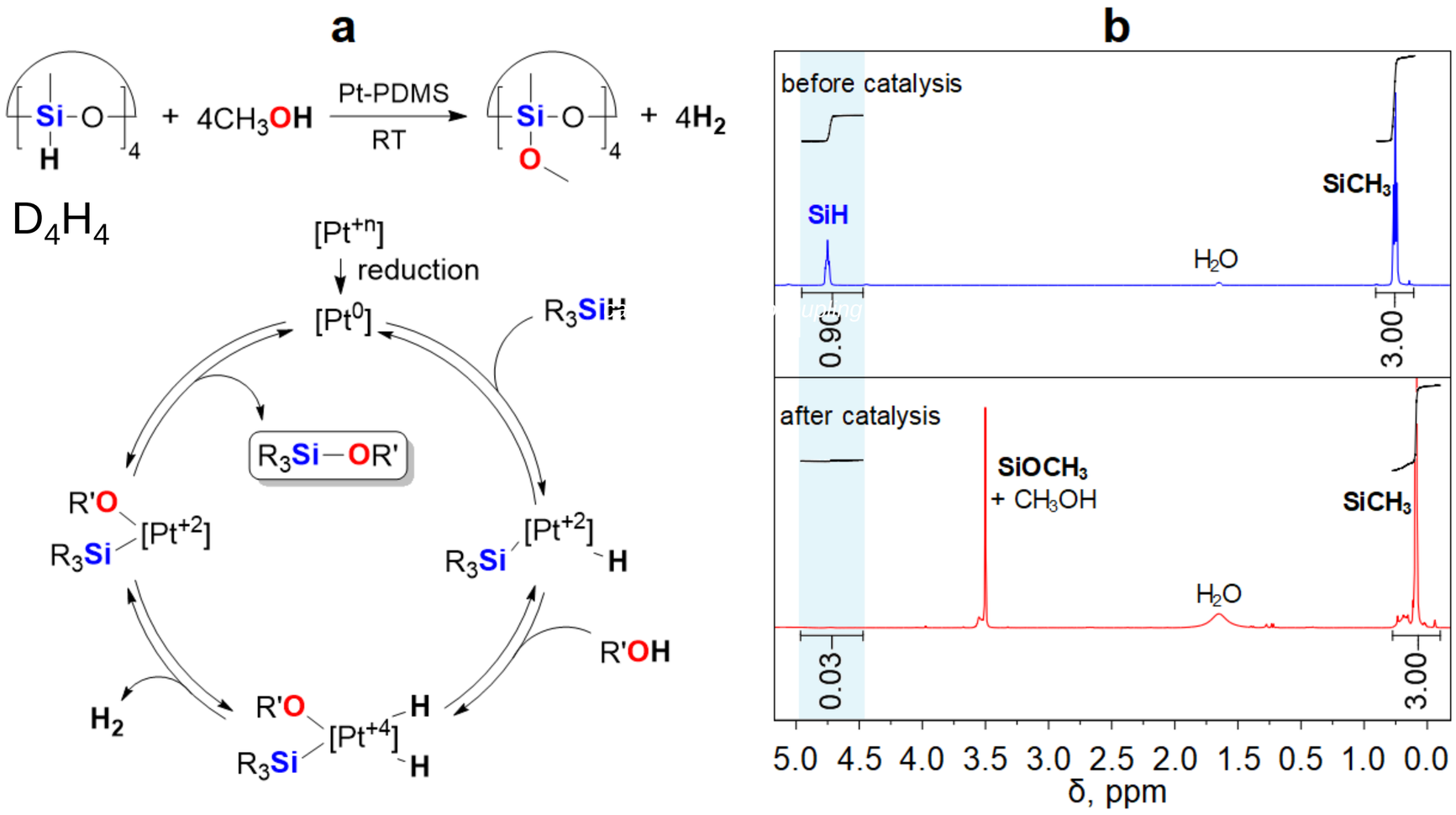
Polymer-supported catalysts are versatile compounds for synthesis of different molecules.[1] Among polymers, polysiloxanes possess good film-forming ability, flexibility, a wide range of working temperature (from –123 to +250 °C), UV-resistivity.[2] These properties make them desirable candidates for catalytic application catalysis. Functionalization of polysiloxanes with platinum group metal complexes opens up new opportunities for usage of resulting metal-polymers compounds for catalytic hydrosilylation and dehydrocoupling reactions for platinum-containing complexes[3] and for carbon-carbon cross-coupling reactions for palladium-containing polysiloxanes, respectively.[4]



Scheme of metal-polymer complexes synthesis

Schemes of conducted catalytic dehydrocoupling reaction with its catalytic cycle initiated by Pt-PDMS (a) and ^{1}H NMR of catalytic dehydrocoupling between 1,3,5,7-tetramethylcyclotetrasiloxane (D_4H_4) and CH_3OH (b).



References

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The authors acknowledge St Petersburg State University for a research project 95408592.