

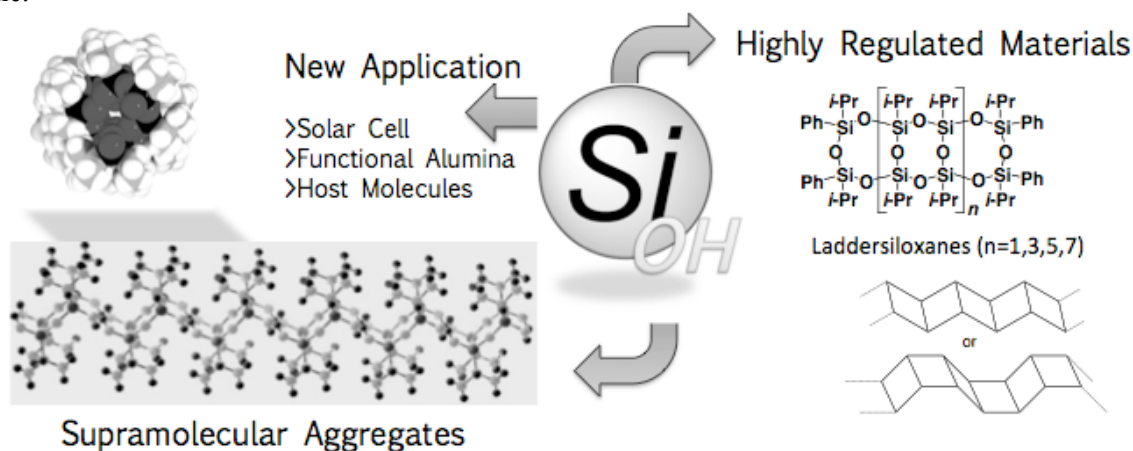
# Amazing Chemistry of Silanols: to Next Generation Materials

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Since the first synthesis of silicon compound in mid-19th century, silicon compounds have been widely utilized in organic synthesis. Among them, silanols are recognized as reactive intermediates to form siloxanes. Before our research, studies on silanols were limited to the isolation and structure determination by introducing bulky substituents for stabilization. Therefore the reactions starting from silanols were mostly undiscovered.

We have found that introducing medium-size substituents is effective for isolation as well as utilization of silanols as starting materials. In this presentation, our 15 years of research on silanol chemistry is summarized. That includes composition of supramolecular aggregates and usages as starting compounds of the siloxanes or silsesquioxanes with highly regulated structures. Those compounds show various outstanding features like thermal stability, transparency, and physiological inertness. Among these compounds, ladder-type silsesquioxanes are highlighted this time.



**Keywords:** Silanol, Silsesquioxane, Structure Determination, High-functional Materials

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