Silane-based SAMs : Spin Coating *vs* Solution Immersion method

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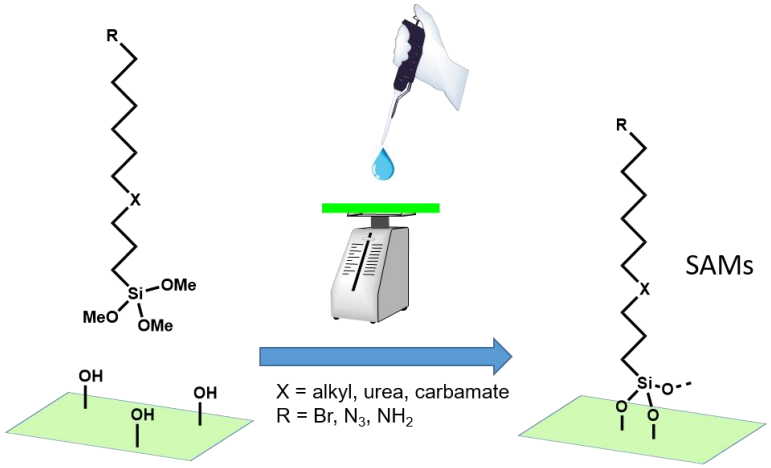
The functionalization of surfaces remains a key challenge in material sciences to control surface properties (wettability, adhesion, biocompatibility, antifouling, etc) and to introduce desired exposed reactive organic functions for subsequent chemical surface reactions and immobilization of (bio)molecules. Self-Assembled Monolayers (SAMs) on silica surfaces provide well-defined molecular platforms for chemical derivatization.[1] Recently we have demonstrated the possibility to prepared SAMs by using the spin coating process, which have the advantage to being fast, conducted under ambient conditions, and used less organic solvent compare to the classic solution immersion method.[2,3]

This study demonstrated that the spin coating process is a versatile and more convenient alternative to prepare robust, smooth and homogeneous SAMs with similar properties and quality as those deposited via immersion. We explore the reactivity of azide/amino-terminated SAMs depending of the deposition methods.

SAMs were characterized by PM-IRRAS, AFM, contact angle, XPS and TOF-SIMS.



Schematic representation of silanes depostited by spin coating to prepare monolayers.

References

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