Preparation of super-hydrophilic coating film using sol-gel method

김태형, 김훈관, 황세환, 장현수, 송기창†
건양대학교
(songkc@konyang.ac.kr†)

The super-hydrophilic surface has excellent effects such as anti-fogging and self-cleaning, so it has potential to be applied in various fields like agriculture, architecture, etc. Since it is difficult to realize super-hydrophilic surface with only a chemical composition, it must be realized by forming a geometric structure together. If the geometrical structure and chemical composition are properly controlled, water permeates below the critical contact angle due to the three-dimensional capillary action of water and the surface according to Wenzel' theory, thereby exhibiting superhydrophilicity.

In this study, we used the sol-gel process. A silica sol is prepared through hydrolysis using TEOS, water, ethanol, and a catalyst to prepare a coating solution, and colloidal silica is added to this solution to give a structural shape.