

K-7 Development of nano material coatings for applications in construction of building facades

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ABSTRACT

Nano materials are playing more and more roles in energy saving and environmental improvement of buildings in urban environment. This presentation will mainly report our research outputs in self-cleaning coating development including a cheap and facile method to fabricate transparent self-cleaning coatings on solar photovoltaic panels and window glass by screen-printing high dispersed TiO₂ nano pastes. The surface wettability measurement showed that all the screen-printed coatings had super hydrophilic surfaces. Based on our successful development of TiO₂ nano materials for self-cleaning of solar photovoltaic panels, our researches of other nano material coatings will also be discussed in this presentation for possible applications in building construction including a highly aqueous dispersed heat insulation coating for reducing heat gains through building envelopes. More attentions will be paid to their economical industrial manufactures and applications in local construction industry. It is our intention to establish collaborations between our researchers and local industry or financial supporters to develop more advanced nano materials for local construction industry for innovative technology and sustainable urban development.