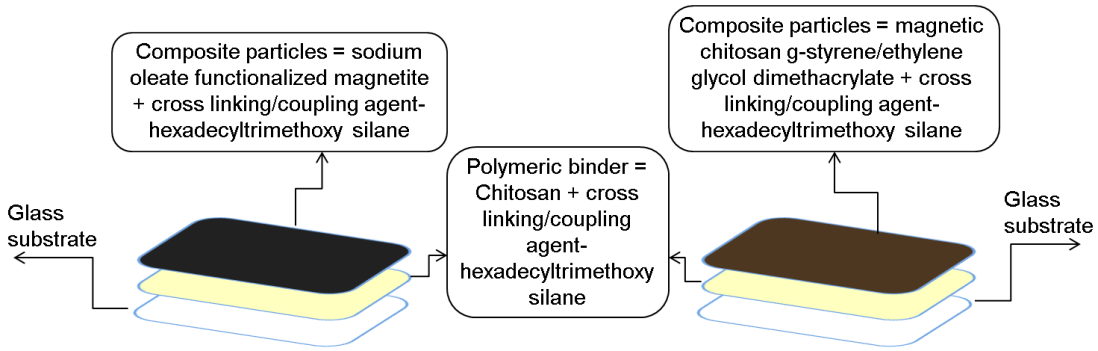
POLYMERIC HYBRID FILM COMPOSITE WITH TAILORED PROPERTIES

G. Dodi, M. Iordache, D. Hritcu, D. Draganescu, M.I. Popa

"Gheorghe Asachi" Technical University of Iasi, Romania;

e-mail: gianina.dodi@yahoo.co.uk

In recent years, significant progress has been made in the choice of materials and in the manufacturing routes for hybrid composites. The introduction of nano-scale components with high surface area and advantageous functionalization has opened the possibility to tailor properties according to specific applications. The aim of the paper is to develop polymeric hybrid composite coatings with structured roughness for water repellent applications. The effects of coating chemistry and layer-by-layer composition were studied in order to maximize non-wetting properties. The optimum formulations are described schematically below:



The promising obtained results evidenced that various degrees of wettability may be generated depending on particle composition and available functionalities.

Acknowledgement: This work was supported by a grant of the Romanian Ministry of National Education, CNCS-UEFISCDI, project number PN-II-ID-PCE-2012-4-0433.