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P. Vast^a; G. Palavit^a

^a Laboratoire de Chimie Appliquée of the Université des Sciences et Techniques de Lille Flandres Artois,

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USE OF SOL-GEL OR COACERVATE PROCESS TO FORMULATE GLASSY OR CERAMIC PHOSPHATES FOR COATING

P.VAST and G.PALAVIT

Laboratoire de Chimie Appliquée of the Université des Sciences et Techniques de Lille Flandres Artois,
F 59655 Villeneuve d'Ascq

One of the objectives of present research on glassy and ceramic phosphates for coating materials is the synthesis of new precursors and the formulation of their mixtures. The properties of these materials depend mainly on the relative proportions of their constituents. Being able to vary at will the formulation of the materials the importance of the sol gel to glass or ceramics is clearly shown. This soft process is, in a number of cases, preferable to the conventional high-temperature process.

The range of applications is very wide, with potential uses in biomedical engineering or space technology, for instance.

Knowledge of the sol- gel process, in particular of the coacervation stage, allows to carry out easily, at room temperature, cation exchange reactions and / or incorporation of finely divided fillers. The chemical aggressiveness of the gel or coacervate may be modulated to optimize bonding power strength with metals - glasses - ceramics - carbone composites

Some of the physicochemical properties and potential utilization of the precursors studied will be presented.