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ABSTRACT

Functionalised particles are highly requested in materials research, as they can be used as vital components in many advanced applications such as smart materials, functional coatings, drug carrier systems or adsorption materials. In this study, furan-functionalised melamine-formaldehyde (MF) particles were successfully prepared for the first time using an organic sol-gel process. Commercially available 2-Aminomethylfuran (AMF) and 2-Aminomethyl-5-methylfuran (AMMF) were used as modifying agents. In the isolated polymer particles, a melamine (M) to modifying agent ratio of M:AMF mol/mol 2.04:1 and M:AMMF ratio of mol/mol 1.25:1 was used. The obtained particles were isolated in various centrifugation and re-dispersion cycles and analysed using ATR-FT-IR, Raman and solid state ¹³C-NMR spectroscopy, TGA, SEM and DSC measurements. Upon functionalisation the size of the MF particles increased (MF 1.59 µm, 27 % CV (coefficient of variation)); MF-AMF 2.56 µm,

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