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Phosphorus-containing polymers, opportunities and challenges

Over the last few years, more and more research papers were published in the field of phosphorus-containing polymers. Polymerization of different kind of phosphorus-based monomers using various methods has been carried out: (meth)acrylates, (meth)acrylamides, vinyl phosphonic acid, styrenic, allyl monomers. Resulting phosphorus-based materials found applications in different domains: biomedical, complexation with metals, fire retardant additives, fuel cell membranes. I will discuss herein different approaches to synthesize new phosphorus-containing polymers, mainly based from bio-resources (i.e. biophenols, polysaccharides) and their potential use as flame retardants, anti-corrosive coatings or even as superplasticizers for cement.

Biography

Ghislain David obtained his PhD degree in 2002 at the University Montpellier II. In 2003, he obtained a postdoctoral position in the laboratory of Pr Gilbert (KCPC, Sydney). In 2004, he joined the laboratory of Pr Boutevin to perform postdoctoral research on CRP of vinyl phosphonates, with the collaboration of Rhodia Chemicals. In 2006 he was awarded as an associate professor at the Institute Charles Gerhardt. His main research projects are in the field of phosphorus-containing polymers as well as in the phosphorus functionalization of bio-based monomers and polymers. He is co-authored of 90 scientific publications including several book chapters and 10 patents.

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