

## ECSOC Alternative synthesis of phosphonate derivatives of 9,10-dihydro-9oxa-10-phosphaphenanthrene-10-oxide





## Marco Bortoluzzi 1,\*, Stefan Ghincolov 1 and Lodovico Agostinis 2

<sup>1</sup> Dipartimento di Scienze Molecolari e Nanosistemi, Università Ca' Foscari Venezia, Italy

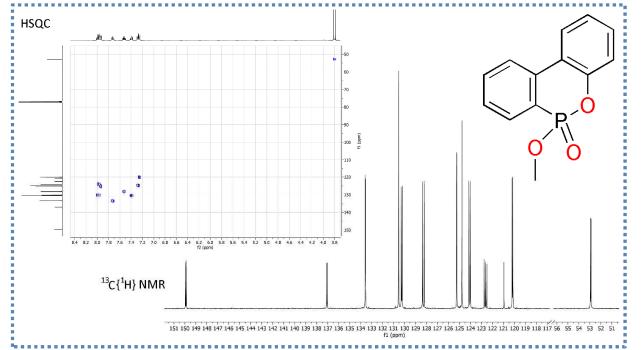
<sup>2</sup> Aimplas, Plastic Technology Center, Valencia, Spain

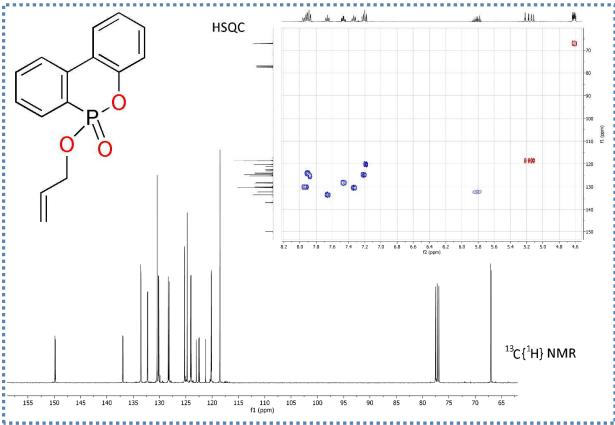
\* Correspondence: markos@unive.it

**Abstract**: The phosphonates 6-methoxy-6*H*dibenzo[1,2]oxaphosphinine-6-oxide and 6-(allyloxy)-6Hdibenzo[1,2]oxaphosphinine 6-oxide were synthesized in a single step under mild conditions from the *H*-phosphinate 9,10-dihydro-9-oxa-10-phosphaphenanthrene-10-oxide (DOPO), following a method based on the oxidation with I<sub>2</sub> of the reactant in the presence of the reactant alcohol as solvent and triethylamine as base.

The compounds, of potential interest in the field of non-halogenated flame retardants, were isolated with high purity and the formulations

were confirmed by multinuclear NMR spectroscopy.





DOPO-O<sub>Me</sub> is interest as ligand for hard transition metal centres, with the aim of developing luminescent mutifunctional coordination compounds. DOPO-O<sub>AllvI</sub> is a potentially reactive flame retardant thanks to the presence of the terminal double bond, that opens the possibility of co-polymerization with suitable monomers.

The data provided were obtained on the basis of the 2023 patent WO2023094526A1, entitled "Preparation process of P(=O)-heteroatom derivatives of dibenzooxaphosphacycles", presented by our research group.

