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## **A new versatile synthesis of functionalized phosphine oxides-efficient ligands for rare-earth metals extraction**

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### **Abstract**

A new approach to the synthesis of 2-hydroxyaryl-alkenylphosphine oxides and dialkyl (diaryl)-(2-methyl-4-oxopent-2-yl)phosphine oxides was developed that involves an interaction of Grignard reagents with available benzo[e]-1,2-oxaphosphorinines and 1,2-oxaphospholene-oxide. This approach allows obtaining target compounds with a high yield. The synthesized phosphine oxides proved to be highly efficient extractants in the micellar extraction of some lanthanides from the nitric acid media. Copyright © Taylor & Francis Group, LLC.

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### **Keywords**

Lanthanide, Micellar extraction, Organomagnesium reagents, Oxaphospholene, Oxaphosphorinine, Phosphine oxide