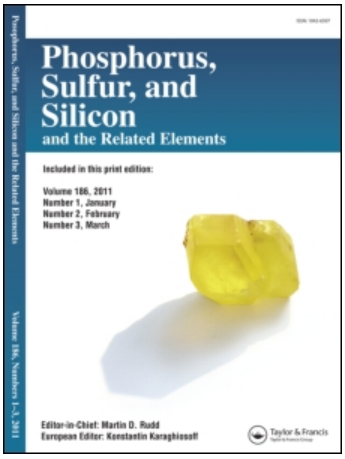

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
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Preparation of Novel Polyoxo Ylides and Diylides and Their Behaviour Towards Pyrolysis and Oxidation

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To cite this Article Aitken, R. Alan and Karodia, Nazira(1996) 'Preparation of Novel Polyoxo Ylides and Diylides and Their Behaviour Towards Pyrolysis and Oxidation', Phosphorus, Sulfur, and Silicon and the Related Elements, 111: 1, 180
To link to this Article: DOI: 10.1080/10426509608054809
URL: http://dx.doi.org/10.1080/10426509608054809

Phosphorus, Sulfur, and Silicon, 1996, Vol. 111, p. 180
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PREPARATION OF NOVEL POLYOXO YLIDES AND DIYLIDES AND THEIR BEHAVIOUR TOWARDS PYROLYSIS AND OXIDATION

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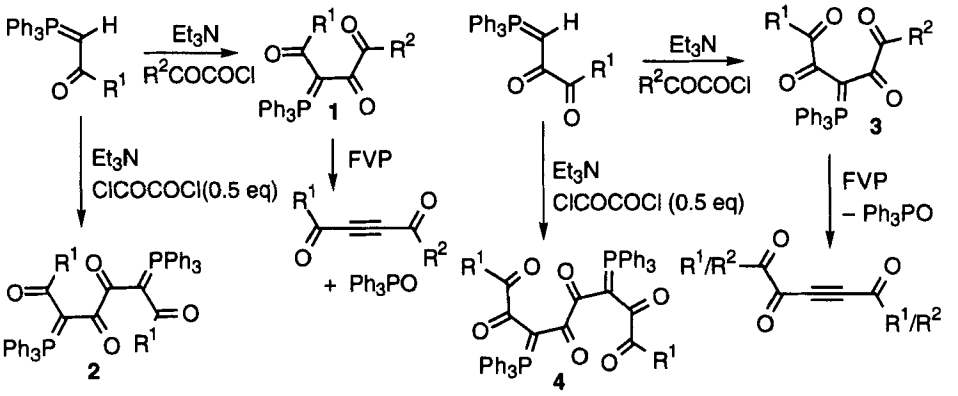
We recently reported the preparation of the new trioxoylides **1** and their pyrolysis to give symmetrical diacylalkynes.[1] Reaction of acyl ylides with oxalyl chloride gives the tetraoxo diylides **2** as shown. The corresponding reactions starting from the α-oxoacyl ylides have been used to obtain examples of tetraoxo ylides **3** and hexaoxo diylides **4**.



All the compounds are stable crystalline solids whose structure is fully supported by the interesting ^{13}C NMR spectra. Flash vacuum pyrolysis (FVP) of **3** gives a mixture of isomeric alkynes as shown but the FVP of both **2** and **4** is rather complex. Oxidative cleavage of the ylide functions in all these compound types is of great interest as a route to vicinal polycarbonyl compounds and has already been achieved for **1** to give tetraones. Other aspects of the structure and reactivity of these compounds have been examined.

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1. R. A. Aitken, H. Hérion, A. Janosi, N. Karodia, S.V. Raut, S. Seth, I.J. Shannon and F.C. Smith, *J. Chem. Soc., Perkin Trans. 1*, 2467 (1994).