

This article was downloaded by:

On: 27 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713618290>

Chemistry of Fulvene-Type P-Heterocyclic Compounds

Shigekazu Ito^a; Hideaki Miyake^a; Satoshi Sekiguchi^a; Matthias Freytag^a; Masaaki Yoshifuji^{ab}

^a Department of Chemistry, Graduate School of Science, Tohoku University, Aoba, Sendai, Japan ^b

Department of Chemistry, the University of Alabama, Tuscaloosa, AL, USA

To cite this Article Ito, Shigekazu , Miyake, Hideaki , Sekiguchi, Satoshi , Freytag, Matthias and Yoshifuji, Masaaki(2008) 'Chemistry of Fulvene-Type P-Heterocyclic Compounds', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 183: 2, 640 — 641

To link to this Article: DOI: 10.1080/10426500701795142

URL: <http://dx.doi.org/10.1080/10426500701795142>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Chemistry of Fulvene-Type P-Heterocyclic Compounds

Shigekazu Ito,¹ Hideaki Miyake,¹ Satoshi Sekiguchi,¹
 Matthias Freytag,¹ and Masaaki Yoshifuji^{1,2}

¹Department of Chemistry, Graduate School of Science, Tohoku
 University, Aoba, Sendai, Japan;

²Department of Chemistry, the University of Alabama, Tuscaloosa AL,
 USA

Reactivities of Mes-protected 1,3,6-triphosphafulvene and 1,4-diphosphafulvene were studied, such as nucleophilic addition, protonation, CT-complex formation, and chalcogenization.*

Keywords Heterocycles; fulvenes; phosphalkenes; ylides

An electrophilic 1,3,6-triphosphafulvene **1** afforded cyclic anions **2** in the reaction with nucleophile and subsequent alkylation gave **3**.^{1a} Protonation of **2**, however, unexpectedly afforded stable P-H phosphorus ylides **4** and **5**.^{1b} 1,4-Diphosphafulvene **6**, a formal [3+2] cyclodimer of phosphallene, formed a CT complex with TCNQ.^{2a} Chalcogenization of **6** was influenced by steric encumbrance of the bulky Mes* groups.^{2b}

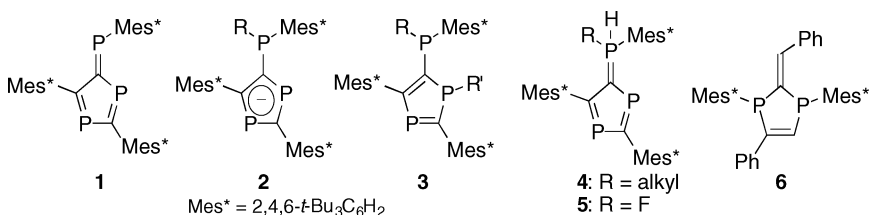


CHART 1

Address correspondence to Shigekazu Ito, Department of Chemistry, Graduate School of Science, Tohoku University, Aoba, Sendai 980–8578, Japan. E-mail: ito@synchem.chem.tohoku.ac.jp

REFERENCES

- [1] (a) S. Ito, H. Miyake, H. Sugiyama, and M. Yoshifuji, *Tetrahedron Lett.*, **45**, 7019 (2004); (b) S. Ito, H. Miyake, M. Yoshifuji, T. Höltzl, and T. Veszprémi, *Chem. Eur. J.*, **11**, 5960 (2005).
- [2] (a) S. Ito, S. Sekiguchi, and M. Yoshifuji, *J. Org. Chem.*, **69**, 4181 (2004); (b) S. Ito, M. Freytag, S. Sekiguchi, and M. Yoshifuji, *Sci. Rep. Tohoku Univ. 1st Ser.*, **81**, 17 (2004).