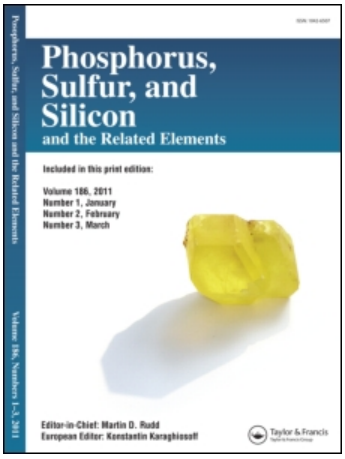


Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Photosensitive Cyclophosphazene and Polyphosphazene

Rui Bao[a]; Jin-Jun Qiu[a]; Shu-Zheng Liu[a]; Tao Cheng[a]; Dong Li[a]; Cheng-Mei Liu[a]
[a] Department of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan, P. R China

To cite this Article Bao, Rui , Qiu, Jin-Jun , Liu, Shu-Zheng , Cheng, Tao , Li, Dong and Liu, Cheng-Mei(2008) 'Photosensitive Cyclophosphazene and Polyphosphazene', Phosphorus, Sulfur, and Silicon and the Related Elements, 183: 2, 636 — 637
To link to this Article: DOI: 10.1080/10426500701795092
URL: http://dx.doi.org/10.1080/10426500701795092

Phosphorus, Sulfur, and Silicon, 183:636–637, 2008

ISSN: 1042-6507 print / 1563-5325 online
DOI: 10.1080/10426500701795092

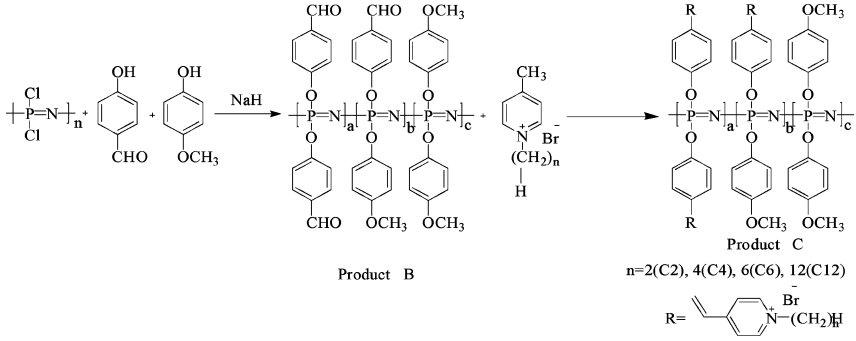
Taylor & Francis
Taylor & Francis Group

Photosensitive Cyclophosphazene and Polyphosphazene

Rui Bao, Jin-Jun Qiu, Shu-Zheng Liu, Tao Cheng, Dong Li, and Cheng-Mei Liu
Department of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan, P. R China

Keywords Photosensitive polymer; polyphosphazene; cyclophosphazene; cycloaddition

Functional polyphosphazenes, such as fire retardant materials, high-performance rubber, biopolymer, optical materials and tissue engineering scaffold materials, have been attracted many attentions in recent years. A photosensitive polyphosphazene containing pyridinium groups was reported in this article.



SCHEME

The synthesis procedures of preparing photosensitive polyphosphazne with pyridinium unit as side group were shown in following scheme. The*Mw* and *Mn* of polymer B and polymer C are 4.05 ×

The work was supported by NSF of China (20374022).

Address correspondence to Chengmei Liu, Department of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan, 430074, P. R China. E-mail: liukui@mail.hust.edu.cn.

10^6 g/mol and 4.69×10^5 g/mol, respectively. For the Polymer C is highly sensitive to light irradiation, it must be kept under dark.

Comparing the absorption spectra of polymer B and Polymer C, there is a new absorption spectrum appearing at 357 nm in polymer C2's curves. It resulted from the formation of conjugated structure. Under UV irradiation, those double bonds underwent cycloadditional reaction to form saturated structure, so the absorption peak at 357 nm decreased with increasing the irradiation time.

REFERENCES

[1] H. R. Allcock. *Chemistry and Applications of Polyphosphazenes* (John Wiley & Sons, Inc., Hoboken, 2003).

[2] M.Gleria and R.D. Jaeger, *Phosphazene, A Worldwide Insight* (Nova Science Publishers, Inc., New York, 2004).