

This article was downloaded by:

On: 30 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>

### 1,3-THIAZOLIDINIC AND 2,4,5,6-TETRAHYDRO-1,3-THIAZINIC SPIROCHROMENES AND MEROCYANINES. SYNTHESIS, REACTIVITY AND PHOTOCHROMIC PROPERTIES

Michel Maguet<sup>a</sup>; Yves Poirier<sup>a</sup>; Francis Garnier<sup>b</sup>; Robert Guglielmetti<sup>a</sup>

<sup>a</sup> Laboratoire de Synthèse Organique, Faculté des Sciences et Techniques, Brest Cédex, France <sup>b</sup>

Laboratoire de Chimie Organique Physique LA 34, Université de Paris VII, Paris

**To cite this Article** Maguet, Michel , Poirier, Yves , Garnier, Francis and Guglielmetti, Robert(1979) '1,3-THIAZOLIDINIC AND 2,4,5,6-TETRAHYDRO-1,3-THIAZINIC SPIROCHROMENES AND MEROCYANINES. SYNTHESIS, REACTIVITY AND PHOTOCHROMIC PROPERTIES', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 6: 1, 193 — 194

**To link to this Article:** DOI: 10.1080/03086647908080370

URL: <http://dx.doi.org/10.1080/03086647908080370>

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.

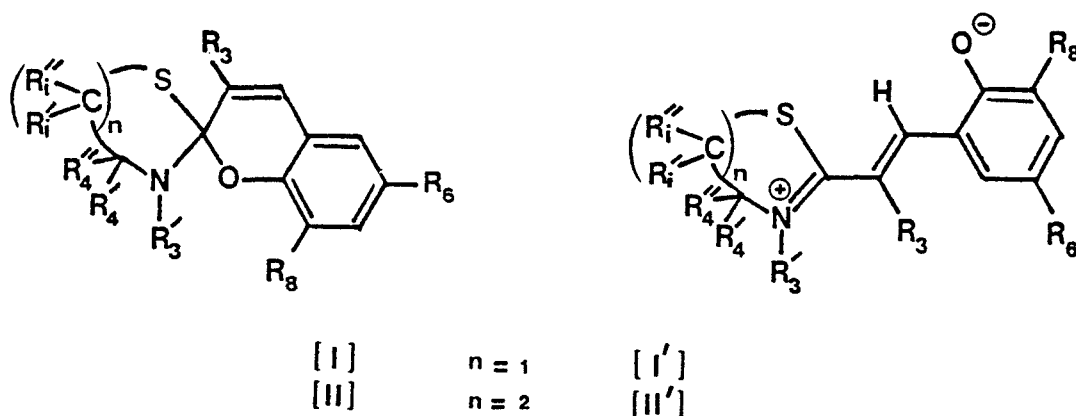
1,3-THIAZOLIDINIC AND 2,4,5,6-TETRAHYDRO-1,3-THIAZINIC SPIROCHROMENES  
AND MEROCYANINES. SYNTHESIS, REACTIVITY AND PHOTOCHROMIC PROPERTIES.

Michel Maguet, Yves Poirier, Francis Garnier\* and Robert Guglielmetti

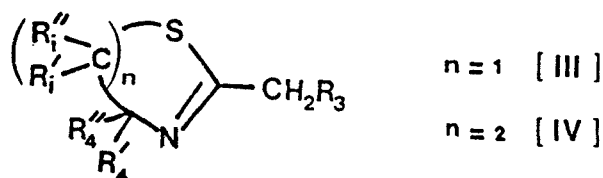
Laboratoire de Synthèse Organique, Faculté des Sciences et Techniques,  
6, avenue le Gorgeu, 29283 Brest Cédex (France)

(\*) Laboratoire de Chimie Organique Physique LA 34, Université de  
Paris VII, 1, rue Guy de la Brosse, 75005 Paris.

The synthesis of spirochromenes (I and II) and merocyanines (I' and II') in 1,3-thiazolidinic and 1,3-thiazinic series, is carried by



condensation, in basic medium, of salicylic aldehyd on heterocyclo-  
ammonium salts issued from  $\Delta^2$ -thiazolines (III) and 5,6-dihydro-4H-  
-1,3-thiazines (IV) bases, having the following general structure :



In the course of preparation of these bases some interesting results have been summarized. The synthesis of  $\Delta^2$ -thiazolines from episulfides in acidic medium, may proceed by many ways because opening of episulfide is possible at the less substituted carbon atom. This process however being minor brings to the formation of isomer  $\Delta^2$ -thiazolines. We have checked too that sulphuration of 5,6-dihydro-4H-1,3-oxazines into 1,3-thiazines (IV), according to A.I. Meyers (1,2), is not a stereospecific reaction. The formation of by-products is observed during the preparation of spirochromenes and merocyanines and is related to the behavior of these compounds towards nucleophilic reagents such as water or hydrogen sulfide. Coumarins, substituted 1,3-thiazolidines or 2,4,5,6-tetrahydro-1,3-thiazines have been identified. Moreover spirochromenes and merocyanines are reactive towards sodium borohydride with opening of chromene cycle or partial reduction. Finally the photochromic equilibrium spiropyran  $\rightleftharpoons$  photomerocyanine was studied by flash photolysis technique and the influence of electronic and steric effects of different substituents on spectrokinetic parameters have been stressed. Comparisons in the field of "colorability" and visible absorption of thiazolidinic and thiazinic photomerocyanines have been made.

(1) A.I. Meyers, J.org.Chem., 1960, 25, 1147

(2) A.I. Meyers, J.org.Chem., 1961, 26, 218