# Photophysics, Photochemistry, and Chromogenism in Different Microenvironment

## Papers in Journals

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<td>12</td>
<td>M. R. di Nunzio, P. L. Gentili, A. Romani, G. Favaro</td>
<td>Role of the microenvironment on the fluorescent properties of a spirooxazine</td>
<td>A spirooxazine exhibits dual fluorescence from π,π* and TICT excited states in microcrystalline phase and in PMMA polymer film.</td>
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<td>(11)</td>
<td>M. R. di Nunzio, P. L. Gentili, A. Romani, G. Favaro</td>
<td>Photochromism and Thermochromism of some Spirooxazines and Naphthopyrans in the Solid State and in Polymeric Film</td>
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\[
F(R_{\lambda_0}) = \frac{(1 - R_{\lambda_0})^2}{2R_{\lambda_0}} \approx \frac{k(\lambda_0)}{s(\lambda_0)}.
\]

\[
\gamma(\lambda_i, \lambda) = \frac{1}{1 + \sqrt{\frac{F(R_{\lambda_i})}{F(R_{\lambda})} + 2}} + \frac{1}{1 + \sqrt{\frac{F(R_{\lambda})/F(R_{\lambda_i}) + 2}{F(R_{\lambda_i})/F(R_{\lambda}) + 2}}}.
\]
*Photochromic, Thermochromic, and Fluorescent Spirooxazines and Naphthopyrans: A Spectrokinetic and Thermodynamic Study.*  
|---|---|
| (5) | P. L. Gentili, F. Ortica, G. Favaro  
*Supramolecular interaction of a spirooxazine with amino acids.*  
*Preparation and characterization of zirconium phosphonate–azobenzene intercalation compounds. A structural, photophysical and photochemical study.*  
| (3) | P. L. Gentili, M. Nocchetti, C. Miliani, G. Favaro  
*Unexpected chromogenic properties of the 1,3,3-trimethylspiro[indoline-2,3′-][3H]naphtho [2,1-b][1,4]oxazine] in solid phase: photochromism, piezochromism and acidichromism*  
P. L. Gentili, U. Costantino, M. Nocchetti, C. Miliani, G. Favaro
A new photo-functional material constituted by a spirooxazine supported on a zirconium diphosphonate fluoride.

P. L. Gentili
*Photochromism in microenvironments of various nature*
EPA Newsletters, 72 (2001) 32-34.

![Diagram](image)

### Communications at Congresses

*Photochromic behaviour of helicene-based naphthopyrans.*  
Proceedings, pag. 43. |
“Photochromism of helical chromenes”  
Proceedings, pag. 173. |
| (14) | XLI Italian Congress of Physical Chemistry. 23-27 June 2013, Alessandria (Italy). | P. L. Gentili  
“Analysis of the Luminescence decay kinetics by the Maximum Entropy Method”  
Proceedings, pag. 153. |
| (13) | XLI Congresso Associazione Italiana di Cristallografia, 11 – 14 September 2012, Verona | A. Guerri, F. Costantino, P. L. Gentili, A. Ienco, S. Midollini, W. Oberhauser  
“I-D Coordination polymers of alkaline earth diprophosphinates.”  
Proceedings pag. 115. |
| (12) | XXIII IUPAC Symposium on Photochemistry, Ferrara 11 -16 July 2010 | P. L. Gentili, F. Costantino, F. Evangelisti  
“Structural and photoluminescence properties of some new rare earths phosphonates”.  
Proceedings page 223. |
| (11) | 2nd Meeting of the Italian and Spanish | F. Costantino, P. L. Gentili, F. Evangelisti |
| (3) | XXII Congresso Interregionale della Società Chimica Italiana (TUMA), Terni 10 - 12 September 2003; | P.L. Gentili, M. Nocchetti and G. Favaro  
“Un esempio di cromogenismo in fase solida microcristallina: fotocromismo, piezocromismo e acidocromismo di una spiro-indolino-nafto ossazina.”  
Proceedings pg. 48. |
| (2) | 2nd Mediterranean Meeting on Photochemistry, Giardini Naxos (ME)  
“A solid phase chromogenic system: photochromism, piezochromism and acidichromism of a spiro-indoline-naphtho oxazine.”  
Proceedings pg. 21. |
| (1) | Congresso Interregionale della Società Chimica Italiana (TUMA), Pisa  
“Comportamento fotocromico di una spiroossazina adsorbita su un fosfonato di Zr(IV).”  
Proceedings pg. 37. |

**Collaborations**

- Dr. F. Costantino, Dr. M. Nocchetti, Prof. R. Vivani, Prof. U. Costantino, Inorganic Laboratory, Chemistry Department, University of Perugia.
- Dr. A. Romani, Center of Excellence SMAArt (Scientific Methodologies applied to Archeology and Art).