

Azo-azulene derivatives for nonlinear optical applications

Submitted by Emmanuel Lemoine on Tue, 02/04/2014 - 16:35

Titre	Azo-azulene derivatives for nonlinear optical applications
Type de publication	Communication
Type	Communication avec actes dans un congr�s
Ann�e	2008
Langue	Anglais
Date du colloque	2008
Titre du colloque	10th Anniversary International Conference on Transparent Optical Networks, ICTON 2008
Titre des actes ou de la revue	ICTON 2008
Volume	3
Pagination	248 - 251
Auteur	Essaidi, Zacaria [1], Bouchouit, K. [2], Ungureanu, E.-M. [3], Meghea, Aurelia [4], Sahraoui, Bouchta [5]
Pays	Gr�ce
Editeur	IEEE Computer Society
Ville	Ath�nes
ISBN	978-1-4244-2625-6 / 978-1-4244-2626-3
Mots-cl�s	azo-azulene derivative [6], Azo-azulene derivatives [7], azo-azulene-polymethylmetacrylate thin film [8], harmonic generation [9], Inorganic compounds [10], Manufacturing [11], memory [12], Nonlinear optical devices [13], Nonlinear optics [14], optical data storage material [15], Optical devices [16], optical films [17], optical harmonic generation [18], optical polymers [19], Optoelectronic devices [20], organic compounds [21], Organic materials [22], organic nonlinear optical material [23], PMMA matrix [24], polymer films [25], Second harmonic generation [26], second order nonlinear optical property [27], Solid state circuits [28], storage media [29], surface relief grating [30], Third harmonic generation [31], third order nonlinear optical property [32]
R�sum� en anglais	Organic materials are of high interest and are widely used for the development of new powerful and low dimensional technologies. They exhibit several advantages with respect to inorganic compounds such as large cubic and quadratic optical nonlinearities, flexibility, easy manufacturing and so on. Among them, some present abilities for photonic or nonlinear optical applications. Intensive researches have been performed these latest decades to synthesize highly efficient and optically active molecules because of the miniaturization of optoelectronic devices. Azo-azulene derivatives are an interesting class of organic molecules for potential applications in optoelectronics and optical data storage due to their polyfunctional properties. We discuss second and third order nonlinear optical properties of a series of azo-azulene compounds in solid state. Thin films were prepared by incorporating these molecules in a polymethylmetacrylate (PMMA) matrix and were investigated. Moreover, potential usage of these guest-host systems for optical data storage is also discussed.

Notes	Date du colloque : 06/2008
URL de la notice	http://okina.univ-angers.fr/publications/ua2135 [33]
DOI	10.1109/ICTON.2008.4598701 [34]
Lien vers le document en ligne	http://dx.doi.org/10.1109/ICTON.2008.4598701 [34]

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