

IRG PHENICS ON-GOING COLLABORATION

Title of the collaboration:	Nonlinear photochromic reactions in organic nano-particles
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COUNTRY A:	Japan	COUNTRY B:	France
Name of group/Institution:	Osaka University	Name of group/Institution:	ENS, Cachan
Name:	Hiroshi Miyasaka	Name:	Keitaro Nakatani
Other participants:	Yutaka Nagasawa	Other participants:	Rémi Métivier
Role in the collaboration:	Time-resolved measurements.	Role in the collaboration:	Synthesis and preparation of nano-particle, steady-state measurements

Background, objectives, results:	Figure:
<p>Nanoparticles of photochromic molecules have been attracting much attention because of the potential applicability in the photonic devices. The first purpose of the present project is to directly reveal the reaction profiles by the ultrafast laser spectroscopy, of which information is indispensable to obtain the rational principle for the designing of molecules with advanced properties. The second aim is to attain the nonlinear response of the photochromic reactions in nanoparticles under rather strong laser field. This leads to the gated-photochromic nanoparticles which can be utilized for memories and switches. At the present stage, we have investigated the reaction profiles in solution phase as reference and linear reaction processes in nanoparticles.</p>	

Common publications, communications, bilateral funding, invitation funding, co-tutoring of students, ...:	<p>Multiphoton-gated cycloreversion reaction of a photochromic 1,2-bis(thiazolyl) perfluorocyclopentene diarylethene derivative, (submitted)</p> <p>JSPS, Sakura Project (2010-2011)</p> <p>Jonathan Piard (Ph.D student in ENS Cachan)</p>
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