

Project: Title

Grantee: Gaetano Campi

Affiliation + contact data: Institute of Crystallography, CNR
00015 Monterotondo Scalo, Rome, Italy - gaetano.campi@ic.cnr.it

Period of STMS (begin- and end date): 03.07.2012-02.08.2012

Host institution (address): Institut Laue Langevin (ILL)
71 Avenue des Martyrs, 38000 Grenoble, Francia

Mentor(s) (name and contact data): Dr. Russo Daniela russo@ill.fr

Aims & subject of work (480 characters, no spaces; Calibri 12):

It is of great relevance to study the function/dynamics relationships of genetically modified photosynthetic organisms, in order to identify the parameters underlying an increased performance in terms of charge separation, protein stability and functional reliability. In this context, the role of water collective dynamics in *Chlamydomonas green algae* carrying both native and mutated proteins has been investigated by neutron Brillouin scattering measurements performed at the Time-of-Flight (ToF) Brillouin Spectrometer (**BRISP**).

Argumentation of necessity of STSM (100 characters, no spaces; Calibri 12):

Included in TD1102 objective

Workplan/timeschedule followed (4 bullets max., Calibri 12):

- Inelastic neutron scattering measurements on *Chlamydomonas green algae* with both native and mutated proteins.
- Preliminary neutron scattering data analysis of water collective dynamics.

Main results and outcome (conclusions):

Inelastic neutron scattering measurements have been performed on *Chlamydomonas green algae* carrying both native and mutated proteins. Final results obtained from data analysis reveal that point genetic mutations may notably affect water density fluctuations providing important insight on the transmission of information possibly correlated to biological functionality.

