

Light scattering platform at FORTH (Heraklion, Greece)

<http://www.iesl.forth.gr/research/material/polymer/index.asp>

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☀ DLS with extended temperature range :

Goniometer set-up (variable wave vector q) with ALV-5000 correlator and 200 mW laser at 532nm; Temperature range : -20°C to +150°C ; Polarized and depolarized scattering detection

Application examples : alpha relaxation in glassy systems, in-situ Zeolites synthesis

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☀ Multispeckle Light Scattering :

Based on CCD Camera detection of scattered light ; Used with goniometer arm for variable angle single scattering for single scattering or fixed forward or backward directions for Diffusive Wave Spectroscopy in the turbid samples limit

Polarized and depolarized scattering detection (for single scattering) ;

PMT detection available for fast dynamics;

Two time correlation $g(t_1, t_2)$ function is computed by software correlator

Application examples : slow dynamics and ageing in arrested samples (hard spheres, multiarm stars),

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☀ 3D – DLS :

For elimination of multiple scattering effects in turbid samples.

LS commercial set-up with Correlator.com digital correlator, HeNE 633 nm laser, APD detection mounted on goniometer arm

Application examples : characterization of strongly scattering systems, q -dependent dynamics concentrated colloidal solution

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☀ Evanescent Wave Dynamic Light Scattering:

DLS at the solid-liquid interface; Polarized and depolarized scattering detection; Variable penetration depth of evanescent wave; variable scattering angle in plane

Application examples : colloidal diffusion close to hard wall, Dynamic of adsorbed polymer layer

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☀ Echo light scattering :

Light scattering under oscillatory shear. Quantification of structural and dynamic modification created by oscillatory shear.

Application examples : Shear induced effect in hard sphere glasses

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