



Participant Profile

for the
Turkish-German Strategy Workshop 2006
TÜBİTAK Marmara Research Center,
Istanbul- Gebze Turkey
13 – 15 December 2006



International Bureau (IB)
of the Federal Ministry of
Education and Research
(BMBF)

1. Contact details and personal information

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¹ **Role/function** e.g. working group leader, managing director, postdoc, PhD etc.

² **Organisation type** e.g. university, research institution, small and medium enterprise (SME), industry etc.

Working Group:	<input checked="" type="checkbox"/> 1 Material Technologies <input type="checkbox"/> 2 Biotechnology, Genomics and Food <input type="checkbox"/> 3 Energy <input type="checkbox"/> 4 Information and Communication Technologies <input type="checkbox"/> 5 Environmental Protection, Climate Change and Sustainable Development
Areas of activity:	<input type="checkbox"/> research <input type="checkbox"/> technology development <input type="checkbox"/> demonstration <input type="checkbox"/> training <input type="checkbox"/> dissemination <input type="checkbox"/> other:
Keywords characterising your area of research:	Please choose the appropriate key words (max. 5) from the following list: http://www.cordis.lu/fp6/keywords 04.06.02.00.00.00.00 04.06.07.05.00.00.00 04.06.09.06.00.00.00 04.06.09.06.02.00.00 04.06.13.00.00.00.00



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**Expertise,
technologies and
infrastructures
available in your
institution:**

Research activities / expertise: Holographic recording, Dielectric measurements under optical pumping, Nanocomponents' doped Liquid Crystal systems

Methods: Diffraction grating experiments, Dielectric Spectroscopy

Key technologies: Holography, Nanoelectronics

Infrastructures: Home-made diffraction grating set-up, Dielectric measurement facilities

Key publications:

Dierking I, **San SE**

[Magnetically steered liquid crystal-nanotube switch](#)

APPLIED PHYSICS LETTERS 87 (23): Art. No. 233507 DEC 5 2005

San SE, Koysal O, Okutan M

[Laser-induced dielectric anisotropy of a hybrid liquid crystal composite made up of methyl red and fullerene C60](#)

JOURNAL OF NON-CRYSTALLINE SOLIDS 351 (33-36): 2798-2801 SEP 15 2005

San SE, Koysal O

[An outstanding holographic composite employing methyl red and fullerene C60 under the same liquid crystal structure](#)

DISPLAYS 24 (4-5): 209-212 DEC 2003

San SE, Koysal O, Ecevit FN

[Molecular reorientation-based grating diffraction in dye-doped nematic liquid crystals with red pumping source](#)

OPTICS COMMUNICATIONS 212 (4-6): 405-409 NOV 1 2002

Koysal O, **San SE**, Ozder S, et al.

[A novel approach for the determination of birefringence dispersion in nematic liquid crystals by using the continuous wavelet transform](#)

MEASUREMENT SCIENCE & TECHNOLOGY 14 (6): 790-795 JUN 2003

Okutan M, **San SE**, Koysal O

[Dielectric spectroscopy analysis of molecular reorientation in dye doped nematic liquid crystals having different preliminary orientation](#)

DYES AND PIGMENTS 65 (2): 169-174 MAY 2005

San SE, Okutan M, Koysal O, et al.

[Dielectric properties of a side-chain liquid crystalline polymer under laser induced circumstances](#)

OPTICS COMMUNICATIONS 238 (1-3): 79-84 AUG 1 2004



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2. Past and present research collaborations

Are you familiar
with the European
Framework
Programme?

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> with Framework Programme 5 <input checked="" type="checkbox"/> with Framework Programme 6 <input type="checkbox"/> with Framework Programme 7	

EU-projects you are
involved in:
Past projects

Programme title / contract number / title / acronym / your function (coordinator / partner / contractor)
Present projects

Other international
collaborations:

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Name(s) and
contact details of
potential partners:

If you would like to suggest the participation of particular partners from the partner country based on existing contacts or collaboration experience, you are welcome to indicate their names and contact details below:

3. Presentation at the Workshop

I will give a presentation at the workshop (approx. 10 min.) to present my institution, my expertise, and my collaboration interests. The contents of my presentations is summarised below (max. 1 page).

<p>A) Laser Induced Dielectric Behaviours of Hybrid Liquid Crystal Systems which are; Electro-optical properties of hybrid liquid crystal composites are investigated in the presence of laser-induced effects. In the scope of these works, various measurements were performed to analyze the effect of laser pumping on molecular reorientation. Electro-optical parameters are investigated under dark and laser-induced conditions for doped and undoped samples. Experimental results show a dependence on laser pumping of the switching voltages of reorientation. Dielectric anisotropy is also studied for the mentioned conditions and its dependency is quantitatively estimated by capacitive measurements. Some case studies : i) constituted by doping a side-chain liquid crystalline polymer ii) made up of methyl red and fullerene C60</p> <p>B) Reorientation of Carbon Nanotubes in Liquid Crystal Mediums Switches based on nematic liquid crystal-single-wall carbon nanotube dispersions are demonstrated. These devices exploit the conductivity anisotropy of nanotubes in combination with the Freedericksz transition of the nematic liquid crystal. The performance is characterized with respect to the electric measuring field amplitude, frequency, etc. The dynamic behaviour indicates a response time of</p>
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approximately 4 s, and possible applications such as magnetic field sensors are discussed.

C) Molecular Reorientation Based Diffraction in Liquid Crystal Films for Dynamic Holography

Results of some grating diffraction experiments are reported. Dyes are used as dopants in nematic hosts in these experiments. For example, a blue anthraquinone dye, Disperse blue 14, is doped to nematic liquid crystal host and the sample is employed as a nonlinear media. The change of refractive index, caused by the photo-induced molecular reorientation, brings about the promising grating diffraction capability of the liquid crystal systems.

I agree with the publication of my data on the Workshop website!

PLEASE FILL IN THIS FORM UNTIL 22 SEPT. 2006 AND RETURN IT TO:

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