



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

Name:	Ekmel Ozbay	Phone:	+90-312-290-1966
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Institution:	Bilkent University	E-Mail:	Ozbay@bilkent.edu.tr
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Postcode and City:	06800 ANKARA		

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 checked="" type="checkbox"/> 4 Information and Communication Technologies <input type="checkbox"/> 5 Environmental Protection, Climate Change and Sustainable Development
Areas of activity:	<input checked="" type="checkbox"/> research <input checked="" 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 nanotechnology, MOCVD, wide-band gap semiconductors, nanophotonics and nanoelectronic devices, metamaterials and photonic crystals
Expertise, technologies and infrastructures available in your institution:	Research activities / expertise: Nitride based optoelectronic and photonic nanodevices. Metamaterials. Photonic crystals. Methods: epitaxial growth, fabrication, characterization Key technologies: Infrastructures: GaN MOCVD system, microfabrication facilities, UV-PL measurements, 50 GHz network analyzer, AFM, Optical Characterization at IV and IR frequencies. Key publications: 1) (INVITED) Ekmel Ozbay, "Plasmonics: Merging Photonics and Electronics at Nanoscale Dimensions," Review Article, Science, vol. 311, 189 (2006). 2) Turgut Tut, Serkan Butun, Bayram Butun, Mutlu Gokkavas, HongBo Yu, and Ekmel Ozbay, "Solar-blind AlGaIn-based avalanche photodiodes," Applied Physics Letters, volume 87, 223502 (2005). 3) (invited) Ekmel Ozbay, Necmi Biyikli, Ibrahim Kimukin, T. Tut, T. Kartaloglu, and Orhan Aytur, "High-Performance Solar-Blind Photodetectors Based on Al _x Ga _{1-x} N Heterostructures", <u>IEEE Journal of Selected Topics in Quantum Electronics</u> , volume 10 , issue 4, p. 742 (2004). 4) Ertugrul Cubukcu, Koray Aydin, Ekmel Ozbay, S. Foteinopolou, and Costas Soukoulis, "Negative Refraction by Photonic Crystals," Nature, vol. 423, 604 (2003). For a complete list see www.fen.bilkent.edu.tr/~ozbay



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2. Past and present research collaborations

Are you familiar
with the European
Framework
Programme?

Yes

No

- with Framework Programme 5
- with Framework Programme 6
- with Framework Programme 7

EU-projects you are
involved in:

Past projects

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

1) "Development and Analysis of Left Handed Materials, (DAHLM) EU 5th Framework Project, IST, in collaboration with University of Crete (coordinator) and Imperial College, UK. September 2002-March 2006.

Present projects

1) EU-PHOREMOST, Network of Excellence on Nanophotonics under EU FP6. October 2004- October 2008. Coordinator (Tyndall Institute, Cork, Ireland)
2) EU-METAMORPHOSE, Network of Excellence on Metamaterials, under EU FP6. June 2004-June 2008.

Other international
collaborations:

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:

1) Prof. Dr. Michael Heuken
Vice President
Corporate Research&Development

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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).

In Bilkent University Nanotechnology Research Center, we focus our research efforts in the following topics

- 1) Nanophotonics
- 2) Nanoelectronics
- 3) Photonic crystals
- 4) Metamaterials
- 5) GaN MOCVD growth
- 6) UV/IR/NIR photodetectors
- 7) High power UV LEDs
- 8) UV optoelectronic integrated circuits
- 9) High power laser diode arrays

We will summarize our efforts in these areas.

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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