



Participant Profile

for the
Turkish-German Strategy Workshop 2006
TÜBİTAK Marmara Research Center
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:	YAŞAR GÜRBÜZ	Phone:	+90-216-483 9533
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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 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 checked="" type="checkbox"/> demonstration <input checked="" type="checkbox"/> training <input checked="" 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 Microelectronics, Sensors, Micro-Electro-Mechanical Systems, Integrated Circuits and Technology
Expertise, technologies and infrastructures available in your institution:	Research activities / expertise: Analog and Mixed-Signal Integrated Circuits; RF & Microwave Integrated Circuits; Sensors and Actuators; Micro-Electro-Mechanical Systems (MEMS); Solid-State Electronic Devices Methods: Research, Technology Demonstration Key technologies: Integrated Circuits, Sensors and Actuators, MEMS Infrastructures: Class-1000 Cleanroom equipped with, 1- μ m microfabrication facility, aimed at MEMS and Sensors fabrication, Bonding/Packaging Facilities, DC-RF-Microwave Test and Measurement Capabilities, Integrated Circuits and MEMS/Sensors Design/Simulation Capabilities (Cadence, Coventor, ADS, etc.). Detailed @ http://people.sabanciuniv.edu/~yasar/micro/ Key publications: [1] W. P. Kang, J. L. Davidson, Y. Gurbuz, and J. J. Cheng, Electrical Conduction and Field Emission Enhancement Mechanism of Ba _{0.67} Sr _{0.33} TiO ₃ Thin Film Coated Silicon Microtips, Solid State Electronics, submitted (April 2006) [2] O. Esame, I. Tekin and Y. Gurbuz, Design of a 4.2-5.4 GHz Differential LD VCO Using 0.35 μ m SiGe BiCMOS Technology for IEEE 802.11a Applications, International Journal of RF and Microwave Computer-Aided Engineering, accepted to appear in May / June 2006 Issue [3] Y. Gurbuz, O. Esame, I. Tekin, W. P. Kang, J. L. Davidson, Diamond Semiconductor Technology for RF Device Applications Solid-State Electronics Volume 49, pages: 1055–1070, 2005 [4] W. P. Kang, J. L. Davidson, D. V. Kerns, Y. Gurbuz, and Q. Zhou, Design, Fabrication and Performance Evaluation of Polycrystalline Diamond Based Power Diodes IEEE Transactions on Power Electronics Volume 20, Issue 1, Page(s): 1 – 10 2005 [5] M. Naseer, T. F. Bechteler, A. Bozkurt, Y. Gurbuz, An Analytical Design Methodology for Microelectromechanical (MEM) Filters using Equivalent Circuits, Sensors and Actuators A: Physical



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Volume 119, pp. 38-47, 2005

[6] Onur Esame, Yasar Gurbuz, Ibrahim Tekin and Ayhan Bozkurt Performance Comparison of State-of-the-Art Heterojunction Bipolar Devices (HBT) based on AlGaAs/GaAs, Si/SiGe and InGaAs/InP, Microelectronics Journal, vol.35, no.11, pp.901-908, 2004

[7] Yasar Gurbuz, Weng P. Kang, Jimmy L. Davidson and David V. Kerns, Diamond microelectronic gas sensor for detection of benzene and toluene Sensors and Actuators B: Chemical, Volume 99, Issues 2-3, Pages 207-215, 2004

[8] Y. Gurbuz, W. P. Kang, J. L. Davidson, and D. V. Kerns, Analysis of Current Conduction Mechanism and Gas Adsorption Effects on Device Parameters of Diamond Based Oxygen Gas Sensor IEEE Transactions on Electron Devices Volume 46, Issue 5, Pages 914-920 1999

[9] J. L. Davidson, W. P. Kang, Y. Gurbuz, K. C. Holmes Diamond as an Active Sensor Materials (invited paper), Diamond and Related Materials, Volume 8, Issues 8-9 Pages 1741-1747, August 1999

Full-list available at personnel web site.

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	<p>Project Title 1: MINAEAST-NET Sponsoring Agency: EU-6th FrameWork Program – Specific Support Action (SSA), MicroNano Systems and Subsystems Division Project Code: INCO-CT-2004-510470 Project Duration: May 2004 – December 2006 Project Budget: 20,000 Euro Role of Enrollment: PI (Sabanci is a partner) Project website: www.minaeast.net Deliverables: Supportive Actions (promotion, educational and financial support for of micro/nano technologies and systems, project/proposal development / networking activities in these areas, financial support for travel and manpower assistance).</p> <p>Project Title 2: TARGET (Top Amplifier Research Groups in a European Team) Sponsoring Agency: EU-6th FrameWork Program – Network of Excellence (NoE), Microelectronics Project Code: IST-1-507893 NoE Project Duration: January 2004 – December 2007 Project Budget: 200,000 Euro Role of Enrollment: PI (Sabanci is a partner) Project website: http://www.target-net.org/ Deliverables: Project Development and Deliverables within the Network; Transceivers and buildingn blocks of transceivers for different applications such as IEEE 802.11a, IEEE 802.15, etc. Here the RF-MEMS related activities are CMOS compatible RF-MEMS devices (switches, filters, resonators, varactors and inductors : off/on-chip integrated) for improving performances of transceivers (and its building blocks), such as higher-Q and wider tuning range, faster/cheaper/reliable switching, etc.</p>
Other international collaborations:	

Name(s) and contact details of potential partners:

	<p>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:</p> <p>Friedrich-Schiller-Universität Jena (Prof. Dr. Wolfgang Richter) richter@pinet.uni-jena.de http://www.physik.uni-jena.de/~layer/</p> <p>Ferdinand-Braun-Institut im Forschungsverbund Berlin e.V. (Dr.-Ing. Joachim Wuerfl)</p>
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http://www.fbh-berlin.de/deutsch/about/about_4d.shtml

[Technische Universität Darmstadt](http://www.hf.e-technik.tu-darmstadt.de/en/staff/)
<http://www.hf.e-technik.tu-darmstadt.de/en/staff/>
(Prof. H.L. Hartnagel (emerit.! hartnagel@hf.tu-darmstadt.de) and
Prof. Dimitris Pavlidis pavlidis@hf.tu-darmstadt.de)

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).

The content of my talk would focus on research and development activities of my group/myself
And can be outlined as the following;

- BioMEMS / Biosensors for risk marker detection in blood/serum.
- RFMEMS for Wireless communication applications
- RFIC and RF-Systems for Wireless Communications Applications

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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Christian.schache@dlr.de

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