

German Microwave Conference - GeMiC 2006 -

Universität Karlsruhe (TH)

March 28 - 30, 2006

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Conference Guide

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About the Conference

Welcome to the **German Microwave Conference - GeMiC 2006** - which will be held from March 28 to 30, 2006 in Karlsruhe, Germany.

The conference site, the Auditorium Maximum of the Universität Karlsruhe (TH), is located near the Baroque Palace in the center of Karlsruhe, Germany. Founded in 1825 as the first Polytechnical School in Germany, the areas that the University has traditionally focused on are engineering, the natural sciences and economics. Heinrich Hertz conceived and performed his brilliant fundamental experiments confirming Maxwell's theory at the University of Karlsruhe (1886-1888). The University of Karlsruhe has close scientific and academic relations to the Karlsruhe Research Center (Forschungszentrum Karlsruhe); this is one of the largest national science and engineering research institutions in Europe.

We would like to thank the many scientists and engineers who are attending the **GeMiC 2006**. A very strong program has been assembled with 1 plenary and 21 normal sessions, including 7 invited and 108 contributed papers from both international and German authors. It will provide ample room for scientific exchange of information about latest achievements in the field of technologies, circuits and systems. In order to come together and to know each other, there will be a conference dinner on Wednesday, March 29, 2006.

Parallel to the conference, an exhibition will take place, where major suppliers and representatives of RF & microwave equipment will present their products. The exhibition is organized by **GEROTRON**.

We also thank the institutional sponsors of the **GeMiC 2006**, the Universität Karlsruhe (TH), and the Forschungszentrum Karlsruhe (Karlsruhe Research Center), the IEEE as co-sponsor through the IEEE MTT Society, and the German IEEE MTT/AP Chapter, as well as the Expert Groups "Microwave Techniques" and "Antennas" of the German VDE/ITG. It is organized by the German Institute for Microwave and Antenna Technology, IMA, a scientific, non-profit organization with the intention to promote R&D activities at universities, research centers and companies in the fields of microwaves, antennas and optoelectronics.

Werner Wiesbeck and Manfred Thumm
Conference Chairmen

Conference Committees

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Prof. Dr.-Ing. Dr. h.c. Dr.-Ing. E.h. Werner Wiesbeck

Institut für Höchstfrequenztechnik und Elektronik, Universität Karlsruhe (TH)

Prof. Dr. rer. nat. Dr. h.c. Manfred Thumm

Institut für Höchstfrequenztechnik und Elektronik, Universität Karlsruhe (TH)
and Karlsruhe Research Center (Forschungszentrum Karlsruhe, FZK)

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Thanks are due to:

- **Universität Karlsruhe (TH)**
- **Karlsruhe Research Center (Forschungszentrum Karlsruhe, FZK)**
- **IEEE Microwave Theory and Techniques Society (MTT-S) and the German IEEE MTT/AP Chapter**
- **German VDE/ITG, Expert Groups "Microwave Techniques" and "Antennas"**
- **GEROTRON, Gräfelfing**
- **EADS Deutschland, Ulm**
- **KATHREIN-Werke, Rosenheim**
- **DaimlerChrysler AG, Stuttgart**
- **Ericsson, Backnang**
- **Elcoteq Communications Technology GmbH, Offenburg**

for their sponsoring and support.

Information for Oral and Poster Presenters

Oral presentations

All conference rooms for oral presentations will have a computerized LCD projector (data projector) and an overhead projector. Be present at least 10 minutes before the start of your underlinesession and inform the session chairman of your arrival.

Time schedules for talks are as follows:

Plenary talks:	35 minutes (30 min. for presentation plus 5 min. for discussion)
Contributed talks:	20 minutes (17 min. for presentation plus 3 min. for discussion)

For the speakers who want to use the data pojector:

1. Strongly recommended:

Speakers should bring only a compact disk or a USB-Memory-Stick with the presentation files in "ppt" (power point) format. Of course "pdf" is also possible. In each conference room an assistant and a notebook computer will be available for the presentations. Speakers should preview their presentation on the computers in the "Prescreening Room" up to 20 minutes before the session is scheduled to start. After prescreening the presentation will be transmittet via LAN to the notebook computer in the conference room.

2. In case that 1. is not feasible:

Speakers should bring their own notebook computers. The computer settings should be as follows:

Screen resolution:	1024 x 768
Refresh rate:	60 - 85 Hz
Output port for display:	VGA monitor 15 pins standard output.

Speakers should be present in the conference room 20 minutes before the session starts to preview their presentation.

3. "Prescreening Room":

Location: Wardrobe Room of AUDIMAX, ground floor, near the main entrance.

Available time for prescreening:

Tuesday, March 28:	10:30 - 18:00
Wednesday, March 29:	08:00 - 18:00
Thursday, March 30:	08:00 - 11:00

Poster presentations

Posters should have a height of 118.9 cm and a width of 84.1 cm (A0 size). On Tuesday, March 28, posters should be set up at 10:30 and taken down at 18:00. On Wednesday, March 29, posters should be set up at 8:30 and taken down at 18:00.

The presenter is expected to remain at the poster during the hours of the poster sessions.

Tuesday, March 28:	10:30 - 11:00	15:20 - 15:50	17:30 - 18:00
Wednesday, March 29:	10:30 - 11:00	15:20 - 15:50	17:30 - 18:00

Official Language

The official language of the conference is English, which should be used in all printed materials, presentations, and discussions.

Registration Desk

Conference materials will be distributed at the registration desk in the foyer of the AUDIMAX. The opening hours of the desk are as follows:

Tuesday, March 28:	09:00 - 18:00
Wednesday, March 29:	08:00 - 18:00
Thursday, March 30:	08:00 - 13:30

Conference Digest

The accepted papers are published on the GeMiC 2006 Conference CD-Rom. A copy will be made available to each participant on arrival at the conference.

Coffee Breaks

Coffee, tea and refreshments will be available in the Foyer of the AUDIMAX during the coffee break.

Conference Dinner

A conference dinner (buffet) will be held on the evening of Wednesday, March 29, 2006. All participants are requested to wear the conference badge provided at the time of registration.

Date and Time: Wednesday, March 29, 2006 at 18:00 o'clock
Location: Conference venue, Foyer AUDIMAX

GeMiC 2006 Secretariat

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Universität Karlsruhe (TH)
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and

Conference Venue AUDIMAX

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e-mail: gemic2006@ihe.uka.de

Internet Room

Several PCs for internet access, LAN ports and Wireless LAN will be provided in the internet room at the AUDIMAX. Please bring your own PC if you wish to use the LAN ports. Internet access will be free for everyone attending the conference. The room will be open during the following dates and times:

Tuesday, March 28:	10:00 - 18:00
Wednesday, March 29:	08:00 - 20:00
Thursday, March 30:	08:00 - 13:00

Wireless Access

In order to get access to the wireless network of the Universität Karlsruhe (TH) (called DUKATH), you need a radio adapter card, which supports the 802.11b or 802.11g standard.

You can make a wireless connection to one of the available networks by choosing the network name (SSID server set Identifier) of your wireless adapter to "ANY" or by selecting the strongest signal from the offered SSIDs. The SSID must begin with "dukath...". For further details refer to the instructions for your wireless adapter.

Activate DHCP (dynamic host configuration protocol) on your computer. Check out whether you have got a correct IP address (for example with the "ipconfig" command in a DOS window). It must begin with "129.13...".

When you open a browser window you will automatically be redirected to the DUKATH authentication website (https://dukath-www.rz.uni-karlsruhe.de/index_en.html). Here you have two possibilities to get access to the internet:

1. If you only want to surf in the internet, type in the conference slogan "**microwave**" on the bottom of the authentication website and select the conference "**GEMIC2006**". Then press the apply button. As long as the browser window is open you will have access to HTTP and/or HTTPS applications.
2. With your individual guest account that was issued with the conference documents, you can get full access to the internet. You can start mail, SSH, HTTP applications or establish a VPN tunnel to your home network. Type in your individual user name and your password and press the apply button. Keeping the following window open you will have full access to the internet (open a new window with "ctrl n"). For further questions or problems please contact the responsible person of the internet room.

Exhibition

From Tuesday, March 28, until Wednesday, March 29, the exhibition in parallel to the Conference is open in the Foyer of the AUDIMAX. The exhibition is organized by GEROTRON. The Exhibitors are:

Alfred Tronser GmbH

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(status March 21, 2006)

GeMiC 2006 Program

Tuesday, March 28, 2006

Time	Audimax A	Audimax B	Seminar-Room
11:00 - 12:40	1a Passive Circuits & Components	1b EM Field Theory	—
12:40 - 13:40	Lunch		
13:40 - 15:20	2a Filters & Multiplexers	2b Antennas I	—
15:20 - 15:50	Coffee Break		
15:50 - 17:30	3a Active Circuits & Systems I	3b Antennas II	—
10:30 - 18:00	4	Poster Session I	

Wednesday, March 29, 2006

Time	Audimax A	Audimax B	Seminar-Room
08:30 - 10:30	5 Opening & Plenary Session		—
10:30 - 11:00	Coffee Break		
11:00 - 12:40	6a Active Circuits & Systems II	6b Ultra Wideband	6c Gyrotrons & High Power mm-Waves
12:45 - 13:40	Lunch		
13:40 - 15:20	7a Active Components & Devices	7b Antennas III	7c Special Session on EM Exposure
15:20 - 15:50	Coffee Break		
15:50 - 17:30	8a MEMS & Tunable Circuits	8b Radars, Sensors & Imaging Systems I	—
08:30 - 18:00	9 Poster Session II		
18:00 - 22:00	Conference Dinner (Buffet)		

Thursday, March 30, 2006

Time	Audimax A	Audimax B	Seminar-Room
08:30 - 10:30	10a Measurements & mm-Wave Techniques	10b Radars, Sensors, and Imaging Systems II	10c Special Session on μ - & mm-Wave Mat. Processing
10:30 - 11:00	Coffee Break		
11:00 - 12:40	11a mm- & Sub-mm Wave Components, Circuits & Systems	11b Radars, Sensors, and Imaging Systems III	—
12:40 - 13:00	Closing Session		—

Sessions

Session 1a - Passive Circuits and Components

Tuesday, March 28, 2006

11:00 - 12:40

Room: Audimax A

Session Chairs: Werner Wiesbeck (University of Karlsruhe (TH))
Rainer Lenz (University of Karlsruhe (TH))

1a-1: **Evaluation of Potting Possibilities for RF Circuits up to 24 GHz**

M.O. Olbrich, W. Kiermeier, E. Biebl

Technische Universität Muenchen, Fachgebiet Hoehstfrequenztechnik, Munich, Germany

1a-2: **Broadband Wilkinson Divider**

A. Wentzel, D. Pienkowski

Technische Universität Berlin, Microwave Engineering Group, Berlin, Germany

1a-3: **A Lumped Element Circulator with Semi-Additive Metallized Conductors**

R. Stonies, D. Teufer, D. Schulz

University of Dortmund, Lehrstuhl für Hochfrequenztechnik, Dortmund, Germany

1a-4: **Impedance Matching of a Loaded Microstrip Transmission Line by Parasitic Elements**

H. Matzner, S. Ouzan, H. Moalem, I. Arie

Holon Institute of Technology, Department of Communication Engineering, Holon, Israel

1a-5: **The Bifurcated E-Plane T-Junction and Its Application to Waveguide Diplexer Design**

J. Bornemann, M. Mokhtaari

Department of Electrical and Computer Engineering, University of Victoria, BC, Canada

Session 1b - EM Field Theory

Tuesday, March 28, 2006

11:00 - 12:40

Room: Audimax B

Session Chairs: Thomas Eibert (University of Stuttgart)
Florian Berbl (Technical University of Munich)

1b-1: **A Fast Spectral Domain Approach for Analyzing Larger Structures Embedded in Multilayered Media**

T. Vaupel (1), T.F. Eibert (2)

(1) FGAN-FHR, Wachtberg, Germany

(2) University of Stuttgart, Germany

1b-2: **Coupling Structures for Terahertz Near-field Microspectroscopy**

G. Staats (1), L.M. Fernandez Ortega (1), U. Schade (2), D. Schondelmaier (2), K. Holldack (2)

(1) Technische Universität Dresden, Germany

(2) Berliner Elektronenspeicherring-Gesellschaft für Synchrotronstrahlung m.b.H. (BESSY), Berlin, Germany

1b-3: **Numerical Computation of Field and Temperature Distribution for a Device Aiming at Local Brain Exposure of Rodents in Vivo at 2 GHz**

A. El Ouardi (1), A. Bitz (1), J. Streckert (1), T. Reinhardt (1), V. Hansen (1), D. Krause-Finkeldey (2), K. Ladage (2)

(1) University of Wuppertal, Electromagnetic Theory, Wuppertal, Germany

(2) Ruhr-Universität Bochum, Institute of Anatomy, Bochum, Germany

1b-4: **On the Calculation of the Radiation Properties of Dipole Antennas in Cylindrical Boreholes Considering Large Scatterers**

A. Becker, Y. Zhou, V. Hansen

University of Wuppertal, Faculty of Electrical, Information and Media Engineering

1b-5: **Numerically Efficient MPIE-MoM Technique for Analysis of Microstrip Structures in Layered Media**

Z. Genc (1), H.H. Balik (2)

(1) University of Firat, Department of Informatics, Turkey,

(2) University of Firat, Department of Electrical and Electronics Eng., Turkey

Session 2a - Filters and Multiplexers

Tuesday, March 28, 2006

13:40 - 15:20

Room: Audimax A

Session Chairs: Arne Jacob (University of Hamburg-Harburg)
Jürgen Detlefsen (Technical University of Munich)

2a-1: **Suspended Stripline Bandpass Filters with Inductive and Mixed Coupling**

W. Menzel (1), A. Balalem (2)

(1) Microwave Techniques, University of Ulm, Germany

(2) Microwave and Communication Engineering Chair, University of Magdeburg, Germany

2a-2: **Compact Broadband Filters for Hybrid Circuits using Flip-Chip-Technology**

T. Baras, F. Muhammad, A.F. Jacob

Tech. Univ. Hamburg-Harburg, Hochfrequenztechnik, Hamburg, Germany

2a-3: **Ka-Band Diplexer Design Using Filter Characteristics with Transmission Zeros - Realised Without Implementation of Cross Couplings**

U. Rosenberg (1), J. Ebinger (1), S. Amari (2)

(1) Ericsson GmbH, Microwave Technology Center, Backnang, Germany

(2) Royal Military College, Department of Electrical and Computer Engineering, Kingston, ON, Canada

2a-4: **Dielectric Rod Waveguide Couplers as Harmonic Filters for Millimeter and Sub-Millimeter Wave Frequencies**

A. Hofmann, M. Manglberger, S. Biber, J. Weinzierl, L.P. Schmidt, H. Brand

University of Erlangen-Nuremberg (UEN), Institute for Microwave Engineering (LHFT), Erlangen, Germany

2a-5: **A Novel 2-GHz Tunable Differential Three-Branch Channelized Bandpass Filter Integrated on Silicon**

S. Darfeuille (1), R. Gomez-Garcia (2), B. Barelaud (1), L. Billonnet (1), B. Jarry (1), H. Marie (3), P. Gamand (3)

(1) XLIM, UMR CNRS 6172, Université de Limoges, Limoges, France

(2) Dpto. SSR, ETSI Telecomunicación, Universidad Politécnica de Madrid, Spain

(3) Innovation centre RF, Philips Semiconductors, Caen, France

Session 2b - Antennas I

Tuesday, March 28, 2006

13:40 - 15:20

Room: Audimax B

Session Chairs: Dirk Heberling (IMST GmbH, Kamp Lintfort)
Marc Rütchlin (University of Karlsruhe (TH))

2b-1: **Improved Patch Antenna Network Model**

K. Solbach, D. Trung Tran

University Duisburg-Essen, Hochfrequenztechnik, Duisburg, Germany

2b-2: **A K-band Biconical Antennas System for Wireless Wideband Communication Equipments**

V. Stornelli (1), M. Caramanico (2), M. Di Fabrizio (2), A. Brigante (2)

(1) Dept. of Electrical Engineering, University of L'Aquila, Italy

(2) R&D Dept. Thales Italia, Chieti Scalo, Italy

2b-3: **Design of an Airborne Dual-Polarized Triple Stacked Patch Antenna for Broadband SAR Applications in P-Band**

M. Limbach, B. Gabler, R. Scheiber, R. Horn

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Oberpfaffenhofen, Germany

2b-4: **Unidirectional Slot Subarray-Antenna with High Efficiency for X-Band Application**

C. Löcker (1), T. Vaupel (1), T.F. Eibert (2)

(1) FGAN-Research Inst. for High Frequency Physics and Radar Techniques, Wachtberg-Werthhoven, Germany

(2) University of Stuttgart, Institute of Radio Frequency Technology, Stuttgart, Germany

2b-5: **A Novel 24 GHz 4-Quadrant Slot Antenna**

P.K. Talukder, F.J. Schmückle, W. Heinrich

Ferdinand-Braun-Institut für Höchstfrequenztechnik (FBH), Berlin, Germany

Session 3a - Active Circuits and Systems I

Tuesday, March 28, 2006

15:50 - 17:30

Room: Audimax A

Session Chairs: Ingmar Kallfass (Fraunhofer Institute for Applied Solid-State Physics, Freiburg)
Viktor Krozer (Technical University of Denmark, Lyngby)

3a-1: Systematic Measurements for Testing the Influence of an Internal Noise Source on the Phase Noise of an Oscillator

M.H.W. Hoffmann, H. Weiß

University of Ulm, Dept. of Microwave Techniques, Ulm, Germany

3a-2: A Wideband Amplifier with 2.4mm Connectors Operating up to 48GHz

M. Häfele (1,3), C. Schick (1), F. Hernandez-Guillen (1), A. Trasser (1), P. Abele (1,2), H. Schumacher (1)

(1) Dept. of Electron Devices and Circuits, University of Ulm, Germany

(2) United Monolithic Semiconductors (UMS) GmbH, Ulm, Germany

(3) DaimlerChrysler AG, Research and Technology, Ulm, Germany

3a-3: Load Variation Tolerant Balanced Amplifier with Two Element LC-Coupler

I. Ibrahim, N. Peters, H. Heuermann

Department of High Frequency Technologies, University of Applied Science Aachen, Germany

3a-4: A Low Power, Variable Gain Common-Gate LNA

T. Stücker, N. Christoffers, R. Kokozinski, S. Kolnsberg, B.J. Hosticka

Fraunhofer Institute of Microelectronic Circuits and Systems (IMS)

3a-5: Cost-Effective, Power-Efficient and Configurable YIG Replacement Signal Source

U.L. Rohde (1,2), A.K. Poddar (2)

(1) University of Cottbus, Germany

(2) Synergy Microwave Corp., NJ, USA

Session 3b - Antennas II

Tuesday, March 28, 2006

15:50 - 17:30

Room: Audimax B

Session Chairs: Klaus Solbach (University of Duisburg-Essen)
Matthias Geissler (IMST GmbH, Kamp Lintfort)

3b-1: A New TEM Double-ridged Horn Antenna for Ground Penetrating Radar Applications

A. Tegatz, A. Jöstingmeier, A.S. Omar

Inst. for Electronics, Signal Processing and Communications, FEIT, University of Magdeburg, Magdeburg, Germany

3b-2: Multipath Mitigation Through Cylindrical Microstrip Phased Array Antenna

D. Mastela (1), L. Reindl (1), T. Zander (1), L. Wiebking (2), M. Kawalkiewicz (3)

(1) University of Freiburg, Institute of Microsystems Technology, Freiburg, Germany

(2) Siemens AG, CT PS7, Munich, Germany

(3) Warsaw University of Technology, Warsaw, Poland

3b-3: A Low Cost Low Profile 19 GHz Scanning Receiver Array with a Nonradiative Dielectric Waveguide Feeding Network

U. Schmid, W. Menzel

University of Ulm, Microwave Techniques, Ulm, Germany

3b-4: Development on Ku-Band Feed Chains for Satellite Antennas

C. Hartwanger, R. Gehring, U.P. Hong, H. Wolf

EADS Astrium GmbH, Munich, Germany

3b-5: Characterization of 35 GHz Tunable Reflectarray Unit-Cells Using Highly Anisotropic Liquid Crystal

R. Marin, A. Mössinger, J. Freese, R. Jakob

Technische Universität Darmstadt, Institut für Hochfrequenztechnik, Darmstadt, Germany

Session 4 - Poster Session I

Tuesday, March 28, 2006

10:30 - 18:00

Room: Foyer

Session Chair: Christiane Kuhnert (University of Karlsruhe (TH))

4-1: Measurement and Modelling of a High Power Amplifier for the Integration in MIMO-OFDM System Simulations

C. Kuhnert, A. Ossowska, W. Wiesbeck

Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

4-2: IEEE 802.15.4/ ZigBee™ Compliant Intermediate Frequency Limiter and Received Signal Strength Indicator for RF Transceivers

R. Vaijinath, S.M. Deokar

E&TC Dept, Sihgad College of Engineering, India

4-3: Analysis of Modes in Rectangular-Waveguide Noncontacting Shorting Plunger

V. Bilik, J. Bezek

Slovak University of Technology, Faculty of Electrical Engineering and Information Technology, Bratislava, Slovakia

4-4: Constraints for Radio based Quality Testing in Industrial Environments

G. Saala (1,3), S. Schulteis (2,3), J.F. Luy (1,3), W. Wiesbeck (2,3)

(1) DaimlerChrysler AG, RMI/DI, Ulm, Germany

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

(3) Universität Karlsruhe (TH), Joint Research-Center on Reliability of Automotive Systems (ZAS), Germany

4-5: Design and Performance of an UWB Antenna for a Mono-static Microwave Radar System

A. Ruengwaree, A. Ghose, G. Kompa

University of Kassel, Department of High Frequency Engineering, Kassel, Germany

4-6: Determination of Dielectric Material Parameters using a Flexible Waveguide Setup

T. Kayser, M. Pauli, W. Wiesbeck

Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

4-7: **Compact Planar Filters for Wireless Communications Systems**

M.G. Banciu (1), N. Militaru (2), A. Ioachim (1), G. Lojewski (2)

(1) National Institute of Materials Physics, Microwave Group, Bucharest-Magurele, Romania

(2) "Politehnica" University of Bucharest, Faculty of Electronics, Telecom. and Inf. Tech., Bucharest, Romania

4-8: **Wideband Single Patch E-shaped Compact Microstrip Antenna for High Speed Wireless Local Area Networks**

G.P. Rao (1), K. Agarwal (1), M.V. Kartikeyan (1), M.K. Thumm (2,3)

(1) Department of Electronics & Computer Engineering, Indian Institute of Technology, Roorkee, Uttaranchal, India

(2) Forschungszentrum Karlsruhe, Institut für Hochleistungsimpuls und Mikrowellentechnik, Karlsruhe, Germany

(3) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

Session 5 - Plenary Session

Wednesday, March 29, 2006

08:30 - 10:30

Room: Audimax A and B

Session Chair: Jürgen von Hagen (DaimlerChrysler AG, Sindelfingen)

Welcome Address

Prorektor Prof. Dr.-Ing. Jürgen Becker
Universität Karlsruhe (TH), Karlsruhe

Welcome, Introduction to the Conference

Prof. Dr.-Ing. Dr. h.c. Dr.-Ing. E.h. Werner Wiesbeck
Universität Karlsruhe (TH), Karlsruhe

5-1: The European Satellite Navigation System Galileo - Technical Implementation (Invited)

H.L. Trautenberg, T. Weber
EADS Astrium GmbH, Munich, Germany

5-2: System and Technology Aspects for Advanced Phased Array Radar Frontends (Invited)

H.-P. Feldle
EADS Deutschland GmbH, Ulm, Germany

5-3: Trends in Basestation RF Technology (Invited)

G. Fischer
Bell Labs Europe, Lucent, Nürnberg, Germany

Session 6a - Active Circuits and Systems II

Wednesday, March 29, 2006

11:00 - 12:20

Room: Audimax A

Session Chairs: Martin Vossiek (Clausthal University of Technology)
Viktor Krozer (Technical University of Denmark, Lyngby)

6a-1: **A 2.14 GHz Inverse Class F Si-LDMOS Power Amplifier with Voltage Second Harmonic Peaking**

W. Gerhard, R. Knöchel

Christian-Albrechts University of Kiel, Department of Electrical Engineering, Microwave Laboratory, Kiel, Germany

6a-2: **Linearisation of High Power Amplifier with Optimised Zone 0 Terminations**

B. Bunz, A.Z. Markos , A. Ahmed, G. Kompa

University of Kassel, Fachgebiet Hochfrequenztechnik, Kassel, Germany

6a-3: **Experimental Study of Time-Domain to Frequency-Domain Correlation for GaAs-HBT Based TWAs for 20 Gbps and 40 Gbps**

C. Meliani, M. Rudolph

Ferdinand-Braun-Institut für Hoehstfrequenztechnik (FBH), Berlin, Germany

6a-4: **An Oscillator with Reduced Phase Noise and Improved Harmonic Characteristics Based on a Corrugated CPW EBG Structure**

C.G. Hwang, N.H. Myung

Dep. of Elec. Engineering and Computer Sc., Korea Advanced Inst. of Sc. and Technology, Daejeon, Korea

Session 6b - Ultra Wideband

Wednesday, March 29, 2006

11:00 - 12:40

Room: Audimax B

Session Chairs: Werner Wiesbeck (University of Karlsruhe (TH))
Werner Sörgel (University of Karlsruhe (TH))

6b-1: **Periodical Protrusions for UWB Slot Antennas**

J.N. Hwang (1), W. Sörgel (2), W. Wiesbeck (2)

(1) Department of Communication Engineering, National Chiao Tung University, Taiwan

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

6b-2: **Pulse-Length Modulator for Analogue-to-Digital Conversion of Radio Frequency Signals**

C. Hartmann, K. Blau, M. Hein

Technische Universität Ilmenau, Department for RF and Microwave Techniques, Ilmenau, Germany

6b-3: **A SiGe Monocycle Impulse Generator for Impulse Radio Ultra-Wideband Applications**

J. Dederer, A. Trasser, H. Schumacher

University of Ulm, Dept. of Electron Devices and Circuits, Ulm, Germany

6b-4: **Modified M-Sequence UWB-Radar**

J. Sachs (1), R. Herrmann (1), M. Kmec (1), P. Peyerl (2)

(1) Technische Universität Ilmenau, Institut für Informationstechnik, Ilmenau

(2) MEODAT GmbH, Ilmenau, Germany

6b-5: **Design of a 10GSps 5 bit flash A/D converter**

P. Monsurrò (1), A. Thiede (2), A. Trifiletti (1)

(1) University of Rome "La Sapienza", Rome, Italy

(2) University of Paderborn, Paderborn, Germany

Session 6c - Gyrotrons and High Power Millimeter-Waves

Wednesday, March 29, 2006

11:00 - 12:40

Room: Seminar-Room

Session Chair: Manfred Thumm (Karlsruhe Research Center)

6c-1: Gyrotron Research at Forschungszentrum Karlsruhe

G. Dammertz (1), A. Arnold (2), D. Bariou (3), E. Giguet (3), R. Heidinger (4), S. Illy (1), J. Jin (1), F. Legrand (3), W. Leonhardt (1), C. Lievin (3), G. Neffe (1), B. Piosczyk (1), T. Rzesnicki (1), M. Schmid (1), M. Thumm (1,2)

(1) Forschungszentrum Karlsruhe, Ass. EURATOM-FZK, IHM, Eggenstein-Leopoldshafen, Germany

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

(3) Thales Electron Devices, Vélizy-Villacoublay, France

(4) Forschungszentrum Karlsruhe, Ass. EURATOM-FZK, IMF, Eggenstein-Leopoldshafen, Germany

6c-2: An 84 GHz, 500 kW, CW Gyrotron

M.V. Kartikeyan (1), E. Borie (2), B. Piosczyk (2), M.K. Thumm (3)

(1) Department of Electronics & Computer Engineering, Indian Institute of Technology Roorkee, Uttaranchal, India

(2) Forschungszentrum Karlsruhe, Institut für Hochleistungsimpuls und Mikrowellentechnik, Karlsruhe, Germany

(3) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

6c-3: Studies on a 250 GHz, 50 W, CW Second Harmonic Gyrotron for Spectroscopy

M.V. Kartikeyan (1), E. Borie (2), M.K. Thumm (2,3)

(1) Department of Electronics & Computer Engineering, Indian Institute of Technology Roorkee, Uttaranchal, India

(2) Forschungszentrum Karlsruhe, Institut für Hochleistungsimpuls und Mikrowellentechnik, Karlsruhe, Germany

(3) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

6c-4: Low Power Verification of a new RF Output System for a 170 GHz, 2 MW Coaxial Cavity Gyrotron

T. Rzesnicki (1), J. Jin (1), B. Piosczyk (1), M. Thumm (1,2), G. Michel (3), D. Wagner (4)

(1) Forschungszentrum Karlsruhe, Institut für Hochleistungsimpuls- und Mikrowellentechnik, Karlsruhe, Germany

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

(3) Max-Planck-Institut für Plasmaphysik, Greifswald, Germany

(4) Max-Planck-Institut für Plasmaphysik, Garching, Germany

6c-5: **Internal Quasi-Optical Mode Converter for a Coaxial Gyrotron**

J.B. Jin (1), M. Thumm (1,2), T. Rzesnicki (1), B. Piosczyk (1)

(1) Forschungszentrum Karlsruhe, Ass. EURATOM-FZK, IHM, Karlsruhe, Germany

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany



Session 7a - Active Components and Devices

Wednesday, March 29, 2006

13:40 - 15:20

Room: Audimax A

Session Chairs: Wolfgang Heinrich (Ferdinand-Braun-Institut für Höchstfrequenztechnik, Berlin)
Klaus Beilenhoff (United Monolithic Semiconductors GmbH, Ulm)

7a-1: **Modeling HBT Low-Frequency Noise for Circuit Simulation**

M. Rudolph (1), F. Lenk (1), S. Gribaldo (2,3), O. Llopis (2,3), W. Heinrich (1)

(1) Ferdinand-Braun-Institut für Höchstfrequenztechnik (FBH), Berlin, Germany

(2) Lab. d'Analyse et d'Architecture des Syst. du Centre National de la Rech. Scientifique, Toulouse, France

(3) University Paul Sabatier, Toulouse, France

7a-2: **Avalanche Breakdown in GaInP/GaAs HBTs**

P. Baureis

University of Applied Sciences Würzburg, Germany

7a-3: **Design and W-CDMA Characterization of a Wideband AlGaIn/GaN HEMT Power Amplifier for Future 3G Multiband Base Station Applications**

D. Wiegner (1), U. Seyfried (1), W. Templ (1), T. Naß (1), S. Weber (1), S. Wörner (1), I. Dettmann (2), R. Quay (3), F. van Raay (3), H. Walcher (3), H. Massler (3), M. Seelmann-Eggebert (3), R. Reiner (3), R. Moritz (3), R. Kiefer (3)

(1) Alcatel-SEL AG, Research Centre Stuttgart, Germany

(2) Institute of Electrical and Optical Communication Engineering at University of Stuttgart, Germany

(3) Fraunhofer Institute of Applied Solid State Physics, Freiburg, Germany

7a-4: **Large-Signal Modeling of AlGaIn/GaN HEMTs with Analytically Calculated Thermal Resistance**

E. Chigaeva (1), I. Dettmann (1), M. Berroth (1), H. Roll (2), H. Schweizer (2)

(1) Institute for Electrical and Optical Communications Engineering, Universität Stuttgart, Germany

(2) 4th Physical Department, Universitaet Stuttgart, Germany

7a-5: **Bias Dependent, Compact Low-Frequency Noise Model of GaInP/GaAs HBT: Experimental Identification and CAD Implementation**

M. Borgarino (1), N. Corciulo (1), C. Florian (2), P.A. Traverso (2), F. Fantini (1), F. Filicori (2)

(1) University of Modena and Reggio Emilia, Information Engineering Department, Modena, Italy

(2) University of Bologna, DEIS Department, Bologna, Italy

Session 7b - Antennas III

Wednesday, March 29, 2006

13:40 - 15:20

Room: Audimax B

Session Chairs: Heinz Chaloupka (University of Wuppertal)
Stephan Schulteis (University of Karlsruhe (TH))

7b-1: Low-order Models for Spatial Diversity Systems Including Real Antenna Characteristics

O. Klemp, G. Armbrecht, H. Eul

Universität Hannover, Institut für Hochfrequenztechnik und Funksysteme, Hannover, Germany

7b-2: Improved Antenna Isolation in Transmit/Receive Applications

D. Esser, B. Solan, H. Chaloupka

University of Wuppertal, Department of Electrical, Information and Media Engineering, Wuppertal, Germany

7b-3: Miniaturization of Mobile Phone Antennas by Utilization of Chassis Mode Resonances

W.L. Schroeder, P. Schmitz, C. Thome

BenQ Mobile GmbH & Co. OHG, Product Innovation Center, Bocholt, Germany

7b-4: Integration of Inverted F-antennas in Small Mobile Devices with Respect to Diversity and MIMO Systems

S. Schulteis, C. Kuhnert, J. Pontes, W. Wiesbeck

Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

7b-5: Evaluation and Optimization of CDMA System Performance in Macrocell Environments Based on Antenna Radiation Pattern

J.A. Pontes, S. Schulteis, M.A. Baldauf, W. Wiesbeck

Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

Session 7c - Special Session on EM Exposure

Wednesday, March 29, 2006

13:40 - 15:20

Room: Seminar-Room

Session Chairs: Christian Bornkessel (IMST GmbH, Kamp Lintfort)
Michael Baldauf (University of Karlsruhe (TH))

7c-1: Minimising the Electromagnetic Exposure at Hot-Spot Areas Using Hybrid (DVB-H/UMTS) Networks

P. Unger, M. Schack, T. Kürner

Dep. of Mobile Radio Systems, Inst. for Com. Tech., Braunschweig Tech. University, Braunschweig, Germany

7c-2: Exposure Reduction in GSM Networks by Cell Splitting

M.A. Baldauf, S. Knörzer, W. Sörgel, W. Wiesbeck

Universität Karlsruhe (TH), Institut für Höchsthfrequenztechnik und Elektronik, Karlsruhe, Germany

7c-3: Exposure Measurements of Modern Digital Broadband Radio Services

C. Bornkessel (1), M. Wuschek (2)

(1) IMST GmbH, Test Centre EMC, Kamp-Lintfort, Germany

(2) University of Applied Sciences Deggendorf, Deggendorf, Germany

7c-4: Compact Setup for an Homogeneous Plane-Wave Exposure for In-Vivo Experiments

S. Tejero, S. Schelkshorn, J. Detlefsen

Technische Universität München, Institute for Highfrequency Engineering, Munich, Germany

7c-5: A Survey Study on Some Symptoms and Sensations Occurred in Eyes Caused by Daily Talking Durations of Mobile Phones

H.H. Balik (1), K. Balikci (2), A. Akbal (1), I.C. Ozcan (3), D. Turgut-Balik (4), Z. Genc (2)

(1) University of Firat, Dept. of Electrical and Electronics Eng. Elazig, Turkey

(2) University of Firat, Dept. of Informatics, Elazig, Turkey

(3) University of Firat, University Health Center, Elazig, Turkey

(4) University of Firat, Dept. Biology, Elazig, Turkey

Session 8a - MEMS and Tunable Circuits

Wednesday, March 29, 2006

15:50 - 17:50

Room: Audimax A

Session Chairs: Erwin Biebl (Technical University of Munich)
Georg Fischer (Bell Labs Europe, Lucent, Nürnberg)

8a-1: **RF-MEMS as the Bridge Between Digital Control and High Performance Analog RF (Invited)**

G. Fischer

Bell Labs Europe, Lucent, Nürnberg, Germany

8a-2: **Accurate Design and Yield Analysis of Tunable Distributed MEMS Bandpass Filter**

S. Simion (1), G. Bartolucci (2), R. Marcelli (3)

(1) MTA, Dept. of Communications and Computer Science, Bucharest, Romania

(2) University of Roma "Tor Vergata", Dept. of Electronics Engineering, Rome, Italy

(3) CNR, Institute for Microelectronics and Microsystems, Microwave Microsystems Group, Rome, Italy

8a-3: **Switching Speed Analysis of Low Complexity RF-MEMS Switches**

C. Siegel (1), V. Ziegler (1), C. von Wächter (1), B. Schönlinner (1), U. Prechtel (1), H. Schumacher (2)

(1) EADS Deutschland GmbH, Corporate Research Centre, LG-ME, Munich, Germany

(2) University of Ulm, Dept. of Electron Devices and Circuits, Ulm, Germany

8a-4: **RF MEMS Market**

J. Bouchaud, B. Knoblich, H. Wicht

Wicht Technologie Consulting, Munich, Germany

8a-5: **Using Metamaterial Structures with Frequency Agile Basestations**

G. Dehm-Andone, G. Fischer

Bell Labs Europe, Lucent, Nürnberg, Germany

8a-6: **Tunable Transmission Lines on Silicon Based upon Periodic Photonic Bandgap Structures**

S. El Rai (1), R. Tempel (1), D. Jäger (2)

(1) ATMEL Duisburg GmbH, Duisburg, Germany

(2) Universität Duisburg-Essen, Zentrum für Halbleitertechnik und Optoelektronik, Duisburg, Germany

Session 8b - Radars, Sensors and Imaging Systems I

Wednesday, March 29, 2006

15:50 - 17:30

Room: Audimax B

Session Chairs: Alberto Moreira (Deutsches Zentrum für Luft- und Raumfahrt e. V., Weßling)
Josef Wenger (DaimlerChrysler AG, Ulm)

8b-1: **A Multi-Frequency Microwave Aperture Synthesis Radiometer for High-Resolution Imaging**

M. Jirousek, M. Peichl, H. Suess

DLR (German Aerospace Center) Oberpfaffenhofen, Microwaves and Radar Institute, Wessling, Germany

8b-2: **An Optical Design for Real-Time Terahertz Imaging**

C. Jördens (1), G. Thorwirth (2), M. Koch (1)

(1) Technische Universität Braunschweig, Institut für Hochfrequenztechnik, Braunschweig, Germany

(2) Jena-Optronik GmbH, Jena, Germany

8b-3: **Broadband Millimeter-wave FMCW Radar for Imaging of Humans**

A. Dallinger, S. Schelkshorn, J. Detlefsen

Technische Universität München, Lehrstuhl für Hochfrequenztechnik, Munich, Germany

8b-4: **Spatial Resolution of Millimeter Wave Imaging at 75-100 GHz and 600 GHz**

H. Phat Tran, F. Gumbmann, J. Weinzierl, L.P. Schmidt

University of Erlangen-Nuremberg, Institute for Microwave Technology, (LHFT), Erlangen, Germany

8b-5: **The ALMA Front End**

H. Rudolf

European Southern Observatory, ALMA, Garching, Germany

Session 9 - Poster Session II

Wednesday, March 29, 2006

8:30 - 18:00

Room: Foyer

Session Chair: Thomas Fügen (University of Karlsruhe (TH))

9-1: **Recent Progress in Optimizing Phase-Correcting Mirrors for a Multi-Frequency Gyrotron**

X. Yang (1), A. Arnold (1,2), G. Dammertz (1), K. Koppenburg (1), M. Thumm (1,2)

(1) Forschungszentrum Karlsruhe, Association EURATOM-FZK, IHM, Karlsruhe, Germany

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

9-2: **Compact Base-Station Filters Using TM-Mode Dielectric Resonators**

M. Höft, T. Magath

Communications Lab. of European Tech. Center, Panasonic Electronic Devices Europe GmbH, Lueneburg, Germany

9-3: **A High Gain Gap Coupled Fed Microstrip Array Antenna**

E. Gelbart, H. Matzner

Department of Communication Engineering, Holon Academic, Institute of Technology, Holon, Israel

9-4: **Concept and Development of a New MOBILE-Gate with All Optical Input**

A. Poloczek, W. Wang, J. Driesen, I. Regolin, W. Prost, F.J. Tegude

University of Duisburg-Essen, Center for Semiconductor and Optoelectronics, Duisburg, Germany

9-5: **A New Design of Lumped Element Bandpass Filter in L-Band**

P. Mapar, G.R. Askari, S. Pourjafari

Information and Communication Technology Institute, Isfahan University of Technology, Isfahan, Iran

9-6: **Active Microwave Filters based on the Combined Dynamic Negatrons**

N.A. Filinyuk, A.M. Kuzemko, L.B. Lischinskaya, M.M. Salech, S.M.M. Jourban, E.V. Vojtsehovska

Vinnitca National Technical University, Vinnitca, Ukraine

9-7: A Proximity Fed Circularly Polarized Microstrip Patch Antenna with a Cross Slot in the Ground Plane

K. Agarwal (1), G.P. Rao (1), M.V. Kartikeyan (1), M.K. Thumm (2,3)

(1) Department of Electronics & Computer Engineering, Indian Institute of Technology, Roorkee, Uttaranchal, India

(2) Forschungszentrum Karlsruhe, Institut für Hochleistungsimpuls und Mikrowellentechnik, Karlsruhe, Germany

(3) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

9-8: Phase Sensitivity To Soil Moisture In Controlled Anechoic Chamber: Measurements and First Results

K. Ben Khadhra (1), M. Nolan (2), T. Börner (1), D. Hounam (1), M. Chandra (3)

(1) German Aerospace Center (DLR), Microwaves and Radar Institute, Oberpfaffenhofen, Wessling, Germany

(2) Institute of Northern Engineering, University of Alaska, Fairbanks, USA

(3) TU Chemnitz, Elektrotechnik und Informationstechnik, Chemnitz, Germany

Session 10a - Measurements and Millimeter Wave Techniques

Thursday, March 30, 2006

08:30 - 10:30

Room: Audimax A

Session Chairs: Jürgen Detlefsen (Technical University of Munich)
Martin Schneider (University of Bremen)

10a-1: **Cavity Perturbation Method for Temperature Controlled Characterization of Liquid Crystals up to 38 GHz**

A. Penirschke (1), S. Mueller (1), F. Goelden (1), A. Lapanik (2), V. Lapanik (3), V. Bezborodov (3), W. Haase (2), R. Jakoby (1)

(1) Technische Universität Darmstadt, Institut für Hochfrequenztechnik, Darmstadt, Germany

(2) Technische Universität Darmstadt, Institut für Physikalische Chemie, Darmstadt, Germany

(3) Belarusian State University, Institute of Applied Physics, Minsk, Belarus

10a-2: **Concealed Weapon Detection with active and passive Millimeterwave Sensors, two Approaches**

H. Essen (1), H.H. Fuchs (1), M. Hägelen (1), S. Stanko (1), D. Nötel (1), S. Erukulla (1), J. Huck (1), M. Schlechtweg (2), A. Tessmann (2)

(1) Research Institute for High Frequency Physics and Radar Techniques (FGAN-FHR), Wachtberg, Germany

(2) Fraunhofer Institut für Angewandte Festkörperphysik (IAF), Freiburg, Germany

10a-3: **Microwave and Millimeterwave Propagation within the Marine Boundary Layer**

H. Essen, H.H. Fuchs

Research Institute for High Frequency Physics and Radar Techniques (FGAN-FHR), Wachtberg (Germany)

10a-4: **An Investigation into the Feasibility of S-Parameter Measurements at X-Band Frequencies with Gaussian Beam Techniques**

M. Sabielny

EADS - Defence Electronics, OPEE11, Ulm, Germany

10a-5: **Near-Field Planar Characterization Applied to the Design of Digital and Radiofrequency Systems**

E. Marzolf (1), M. Drissi (1), A. Ziyat (2)

(1) INSA de Rennes, IETR, Rennes, France

(2) Mohammed First University, Laboratory of Electronics & Systems, Oujda, Morocco

Session 10b - Radars, Sensors and Imaging Systems II

Thursday, March 30, 2006

08:30 - 10:30

Room: Audimax B

Session Chairs: Jörg Schöbel (University of Braunschweig)
Karin Schuler (University of Karlsruhe (TH))

10b-1: **Effects of Water and Ice Layer on Automotive Radar**

A. Arage (1), W.M. Steffens (1), G. Kuehnle (1), R. Jakoby (2)

(1) Robert Bosch GmbH, Automotive Electronics, Leonberg, Germany

(2) Technische Universität of Darmstadt, Institute of Microwave Engineering, Darmstadt, Germany

10b-2: **Microwave Remote Sensing of Stratospheric Trace Gases Using Digital Fast Fourier Transform Spectrometers**

S.C. Müller (1), A. Murk (1), C. Monstein (2), N. Kämpfer (1), H. Meyer (2)

(1) University of Berne, Institute of Applied Physics, Berne, Switzerland

(2) ETH Zürich, Institute of Astronomy, Zürich, Switzerland

10b-3: **A 76 GHz Folded Reflector Antenna for True Ground Speed Measurement**

A. Hantsch (1), W. Menzel (2)

(1) Robert Bosch GmbH, Department CR/ARE1, Gerlingen, Germany

(2) University of Ulm, Department of Microwave Techniques, Ulm, Germany

10b-4: **Observation of a Walking Pedestrian with a 24GHz Automotive Radar Sensor**

F. Fölster, H. Rohling, H. Ritter

Hamburg University of Technology, Department of Telecommunications, Hamburg, Germany

10b-5: **Vehicle Occupant Monitoring with Capacitive Arrays**

M. Fritzsche (1), C. Prestele (1), T. Schwarz (1), S. Prutyanyy (2)

(1) DaimlerChrysler AG, Research & Technology, Active Safety & Driver Assistance Lab, Ulm, Germany

(2) University of Stuttgart, Dep. of Electrical Engineering, Stuttgart, Germany

Session 10c - Special Session on Microwave and Millimeter-Wave Material Processing

Thursday, March 30, 2006

08:30 - 10:30

Room: Seminar-Room

Session Chairs: Jürgen von Hagen (DaimlerChrysler AG, Sindelfingen)
Mario Pauli (University of Karlsruhe (TH))

10c-1: **Prospects of Electromagnetic Materials Processing by Use of cm-, mm- and μm -Waves (Invited)**

M. Willert-Porada

University of Bayreuth, Faculty of Applied Natural Sciences, Materials Processing, Germany

10c-2: **Optimisation of the Microwave Assisted SHS of Intermetallics in Single Mode Applicators (Invited)**

C. Leonelli, G. Poli, P. Veronesi

University of Modena and Reggio Emilia, Department of Materials and Environmental Engineering, Modena, Italy

10c-3: **Accelerated Curing of Adhesive with Microwave (Invited)**

R. Emmerich (1), M. Graf (1), W. Krause (1), F. Henning (1), P. Kölzer (2)

(1) Fraunhofer Institut für Chemische Technologie, Pfinztal, Germany

(2) Fraunhofer Institut Produktionstechnologie, Aachen, Germany

10c-4: **Highly Efficient Slotted Waveguide Feeding Systems for 2.45 GHz Industrial Applicators**

S. Stanculovic (1), L. Feher (1), M. Thumm (1,2)

(1) Research Center Karlsruhe, Institute for Pulsed Power and Microwave Technology, IHM, Karlsruhe, Germany

(2) Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

10c-5: **MW Disinfestations of Pallets**

B. Bisceglia (1), R. De Leo (2), N. Diaferia (3)

(1) University of Salerno, Department of Electrical and Information Engineering, Fisciano, Italy

(2) University of Sannio at Benevento, Engineering Faculty, Benevento, Italy

(3) Università Politecnica delle Marche, Dipartimento di Elettromagnetismo e Bioingegneria, Ancona, Italy

10c-6: **A Novel Antenna Design for Soil Decontamination with Microwaves**

M. Pauli, T. Kayser, W. Wiesbeck

Universität Karlsruhe (TH), Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany



Session 11a - mm- and Sub-mm-Wave Components, Circuits and Systems

Thursday, March 30, 2006

11:00 - 12:40

Room: Audimax A

Session Chairs: Lorenz-Peter Schmidt (University Erlangen-Nuremberg)
Hans Rudolf (E.S.O., Garching)

11a-1: **Application of Silicon Micromachining Techniques for the Manufacturing of New Passive THz-Components**

S. Biber, J. Schür, L.P. Schmidt

University of Erlangen-Nuremberg, Institute for Microwave Technology, (LHFT), Erlangen, Germany

11a-2: **Influence of Metallic Primers on the Attenuation of CPW in the Millimeter- and Submillimeter Range**

V. Müllerwiebus, K. Schünemann

Hamburg University of Technology, Microwave Engineering Department, Hamburg, Germany

11a-3: **A Collector-Up SiGe-HBT for High Frequency Applications**

M. Joodaki (1), H. Hillmer (2)

(1) Infineon Technologies AG, Munich, Germany

(2) Univ. of Kassel, Dept. of Tech. Electronics, Institute of Nanostructure Tech. and Analytics (INA), Kassel, Germany

11a-4: **Tunable Microwave Transmission through a Periodically Corrugated Waveguide**

V. Pogrebnyak, E. Akray, N. Küçükaltun

Dep. of Electrical and Electronics Eng., Faculty of Eng. and Architecture, Çukurova University, Adana, Turkey

11a-5: **FDTD Analysis of a Microwave/mm-wave FET Based on the Fully Distributed Model**

A. Taeb, A. Abdipour, A. Mohammadi

Amirkabir Univ. of Tech., E.E. Department, Microwave/mm-wave & Wireless Com. Research Lab., Tehran, Iran

Session 11b - Radars, Sensors and Imaging Systems III

Thursday, March 30, 2006

11:00 - 12:40

Room: Audimax B

Session Chairs: Wolfgang Menzel (University of Ulm)
Klaus Solbach (University of Duisburg-Essen)

11b-1: **Improving FMCW-based Object Tracking Using Phased Array Antennas Combined With Sigma-Point Kalman Filters**

D. Mastela (1), L. Reindl (1), L. Wiebking (2), T. Zander (1)

(1) University of Freiburg, Department of Microsystems Engineering, Freiburg, Germany

(2) Siemens AG, CT PS7, Munich, Germany

11b-2: **Detection, Localisation and Tracking of Foreign Objects Using UWB-Pulses**

A. Gülck, O. Schimmer, R. Knöchel

Microwave Laboratory, Faculty of Engineering, University of Kiel, Germany

11b-3: **SNR Considerations for Widebeam, Short-Range Synthetic Aperture Radar Processing**

F. Gerbl, E.M. Biebl

Technische Universität München, Fachgebiet Höchsthfrequenztechnik, Munich, Germany

11b-4: **Factor and Principle Component Analysis for Automatic Landmine Detection Based on Ground Penetrating Radar**

F. Abujarad, A.S. Omar

University of Magdeburg, Microwave and Communications Engineering, Magdeburg, Germany

11b-5: **Spatial Time Domain Reflectometry for Monitoring Transient Soil Moisture Profiles - Applications of the Soil Moisture Group, Univ. of Karlsruhe**

R. Becker (1,2), S. Schlaeger (1,3), C. Hübner (1,4), A. Scheuermann (1,5), W. Schädel (1,6)

(1) Universität Karlsruhe (TH), Soil Moisture Group, Karlsruhe, Germany

(2) IMKO, Mikromodultechnik GmbH, Ettlingen, Germany

(3) SCHLAEGER - mathematical solutions & engineering, Karlsruhe, Germany

(4) University of applied sciences, Department of electrical engineering, Mannheim, Germany

(5) Universität Karlsruhe (TH), Institute of Rock Mechanics and Soil Mechanics, Karlsruhe, Germany

(6) Universität Karlsruhe (TH), Institute for Water and River Basin Management, Karlsruhe, Germany

Additional Meetings

(only for the respective members)

General Meeting IMA

Date: Tuesday, March 28, 2006

Time: 18:00 - 20:00

Location: Gastdozentenhaus (Kamin Zimmer)

MTT Board Meeting

Date: Tuesday, March 28, 2006

Time: to be announced

Location: to be announced

Meeting ITG Fachausschuss 7.3

Date: Wednesday, March 29, 2006

Time: 12:40

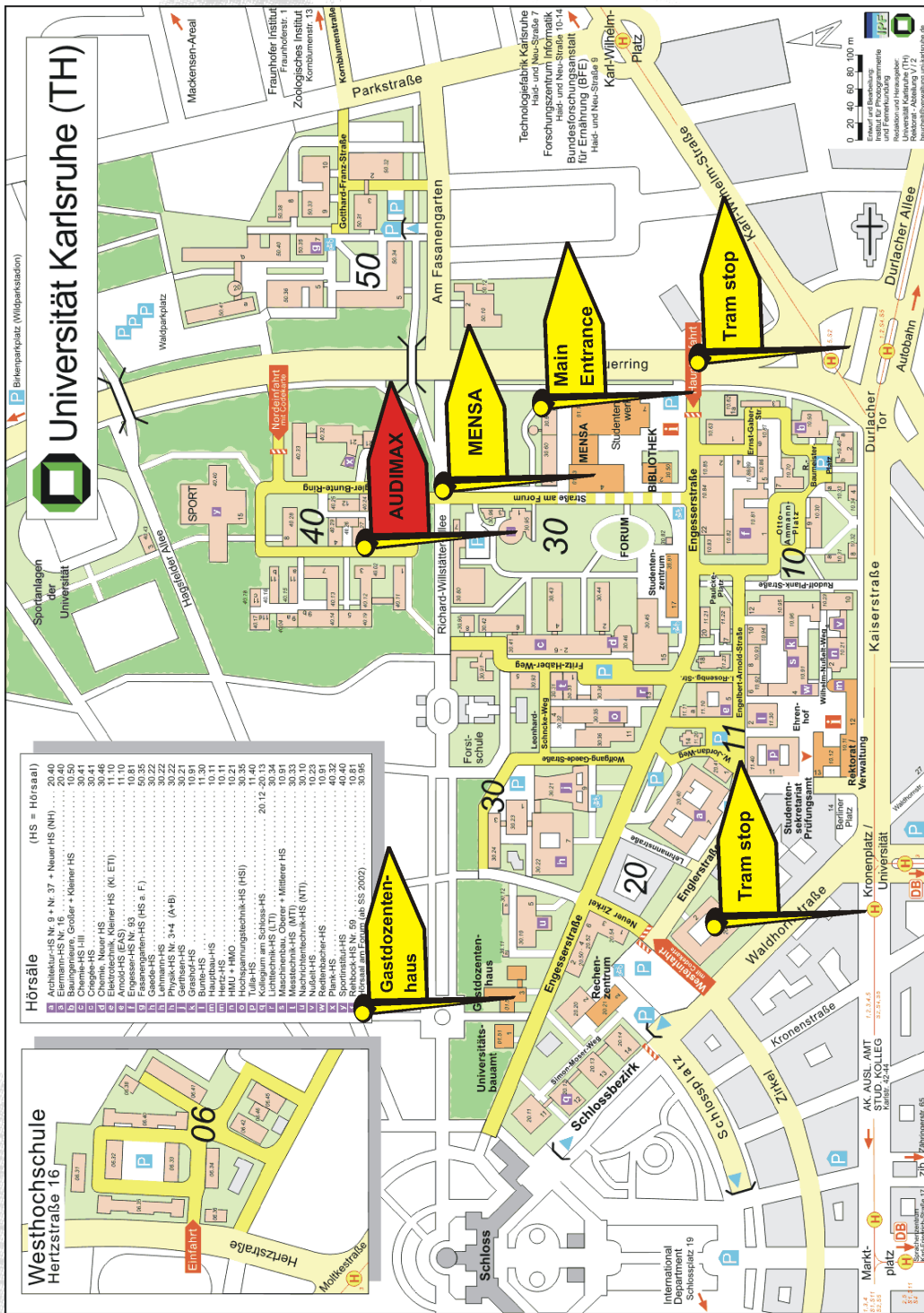
Location: Gastdozentenhaus (Dürer Raum)

Map of Karlsruhe



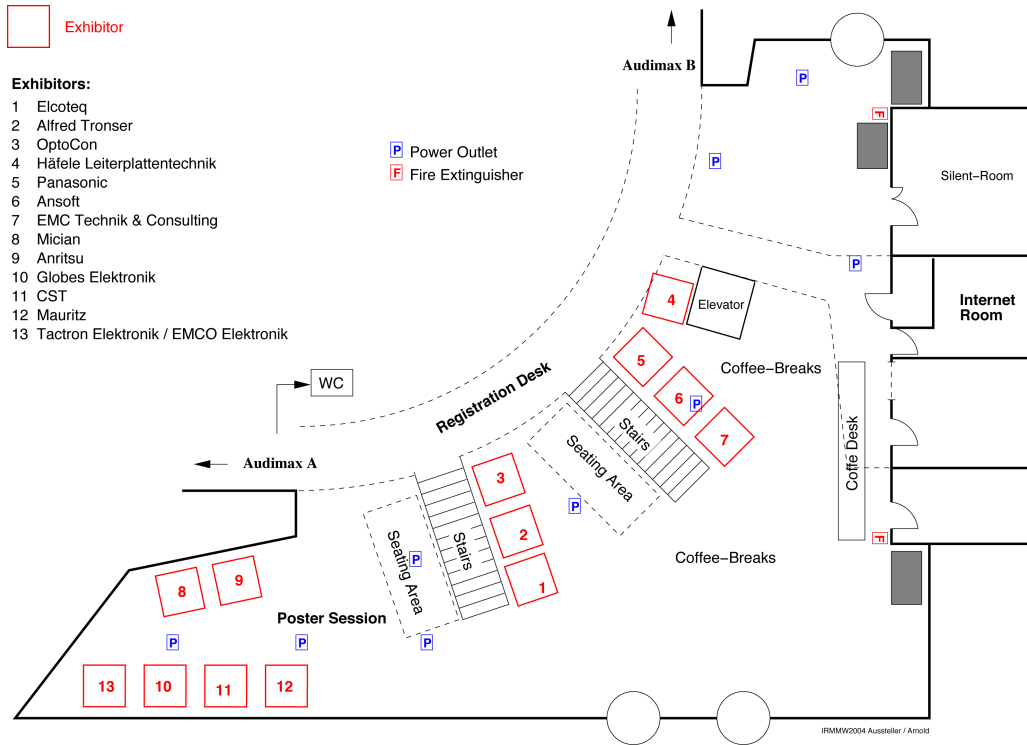
- 1** Audimax, University of Karlsruhe
- 2** Karlsruhe Central Railway Station
- 3** Hotel Kübler
- 4** Hotel Handelshof
- 5** Hotel Eden
- 6** Hotel Garni Berliner Hof
- 7** Hotel Kaiserhof
- 8** Hotel Erbprinzenhof
- 9** Hotel Blankenburg

Campus Map

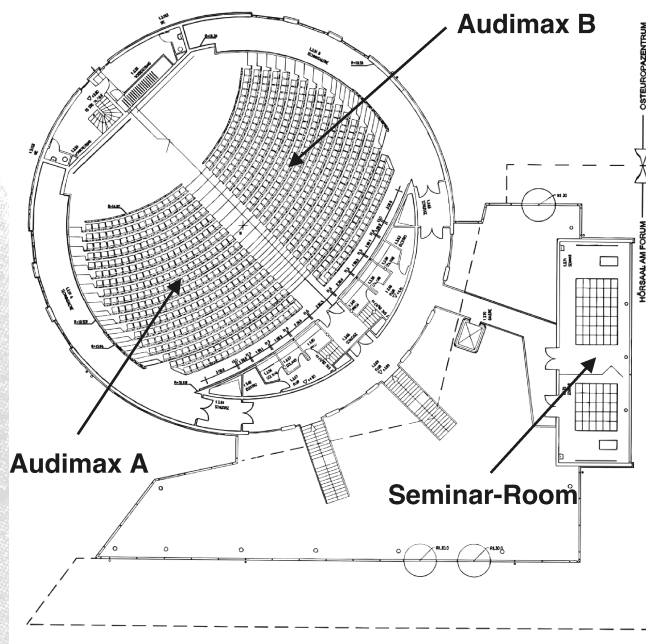


Conference Venue (Floor Plan)

AUDIMAX (1st floor)



AUDIMAX (2nd floor)



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