

**Fondazione Giorgio Ronchi
CNR - ITC Padova
CNR - IFAC "Nello Carrara"
CNR - ISTI "Alessandro Faedo"**

**7th International Workshop on
Advanced Infrared
Technology and Applications**

<http://ronchi.iei.pi.cnr.it/AITA2003>

FINAL PROGRAM

Sponsored by



**September 9-11, 2003
Scuola Normale Superiore, Pisa, Italy**

AITA 2003 PROGRAM

Tuesday, September 9

09.30 *Opening Session*

G.M. Carlomagno, C. Corsi, H. Rutt

Advanced Sensors, Chairman: G.M. Carlomagno

09.45 **C. Corsi** (CREO, Italy) (*invited lecture*)

Future technologies and the future of infrared

10.15 **J. L. Tissot** (ULIS, France) (*invited lecture*)

IR detection with Uncooled Smart Sensors

10.45 **M. Strojnik, G. Paez** (Centro de Investigaciones en Optica, Mexico)

Sensitivity of a temperature sensor employing ratio of fluorescence power in a band

11.05 *Coffee Break*

Advanced Sensors, Chairman: M. Strojnik

11.20 **H. Madura, T. Piatkowski, E. Powiada** (MUT-IO, Poland)

Multispectral precise pyrometer for measurement of seawater surface temperature

11.40 **H. Madura, T. Piatkowski** (MUT-IO, Poland)

Emissivity compensation method in double-band pyrometry

12.00 **A. Bendada, A. Derdouri, K. Cole, M. Lamontagne, Y. Simard** (NRC, Canada)

A new infrared pyrometer for polymer temperature measurement during injection molding

12.20 **G. Paez, M. Strojnik** (Centro de Investigaciones en Optica, Mexico)

Er-doped Silica dynamic IR-to-visible image converter

12.40 **N. Liberatore, R. Viola** (CREO, Italy)

Real time high spatial resolution thermal imaging

13.00 **J. Piotrowski, A. Rogalski** (MUT-IAP, Poland) (*invited lecture*)

Uncooled longwavelength infrared photon detectors

13.30 *Lunch*

Industrial Applications, Chairman: V. Malyutenko

15.00 **F. Lepoutre** (ONERA/DMSE/MECS, France) (*invited lecture*)

An active infrared camera to detect open cracks: an old idea emerging owing to signal treatment

15.30 **M. Honner, J. Kunes, P. Litos** (DTTP, Univ. of West Bohemia, Czech Rep.)

Some problems of thermography application in technology research

15.50 **F. Guidotti, M. Lanzetta** (DMNP, Univ. of Pisa, Italy)

Analysis and reengineering of the colour formulation and control in the production of high-quality labels by a graphic industry

16.10 **W. Swiderski** (MIAT, Poland)

Temperature estimation of mortar bore by thermography method

16.30 *Coffee Break*

Industrial Applications, Chairman: F. Lepoutre

- 16.50 **G. Benelli, E. Paganini, M. Ghironi** (ENEL, Italy)
Infrared based measurement techniques as diagnostic tools in power generation
- 17.10 **G. Cavaccini, S. Esposito, C. Incarnato, A. Ciliberto** (ALENIA, Italy)
In-service aeronautical inspections by thermography
- 17.30 **V. Vavilov, D. Nesteruk** (Tomsk Polytechnic University, Russia)
Infrared thermographic surveys at Russian power plants
- 17.50 **V. Malyutenko** (ISP, Ukraine)
Three approaches in infrared imaging of electronic devices

Wednesday, September 10

Advanced Technology and Materials, Chairman: H. Zogg

- 09.30 **H. Rutt et al.** (DECS, Univ. of Southampton, UK) (*invited lecture*)
The Jefferson Laboratory High Power Free Electron Laser
- 10.00 **D. Zintu, A. Dundee, G. Tosone, S. Mengali, L. Novella** (CREO; CETEV, Italy)
Silicon carbide as new advanced mechanical resistant material for large area bolometers devices
- 10.20 **N.V. Sochinskii, V.N. Babentsov, P.J. McNally, A. Dundee, C. Corsi** (Inst. Microelectr. Madrid-CNM-CSIC, Spain; Kristall. Inst., Albert Ludwigs Univ., Germany; CREO, Italy)
Infrared photoluminescence imaging of infrared materials
- 10.40 **E. Pieczynska** (IFTR-PAS, Poland)
Environmentally friendly polymeric materials

11.00 *Coffee Break*

Advanced Technology and Materials, Chairman: H. Rutt

- 11.20 **H. Zogg, K. Kellermann, K. Alchalabi, D. Zimin** (Swiss Federal Inst. of Technology, Switzerland) (*invited lecture*)
Optically pumped lead-chalcogenide mid-infrared emitters on Si-substrates
- 11.50 **M. Pantani, F. Castagnoli, F. D'Amato, M. De Rosa, P. Mazzinghi, P.W. Werle** (INOA, Italy)
Two infrared laser spectrometers for the in situ measurement of stratospheric gas concentration
- 12.10 **G. Cuccurullo, F. Santoro, V. Piero** (DIM, Univ. of Salerno, Italy)
IR control in Microwave heating processes
- 12.30 **F. Cemuschi, L. Lorenzoni, S. Ahmaniemi** (CESI, Italy; Metso Paper Inc., Finland)
Time and temperature evolution of thermal barrier coatings by photothermal techniques
- 12.50 **S. Brugioni, R. Meucci** (INOA, Italy)
The properties of liquid crystals in the mid-infrared spectral region and their applications
- 13.10 *Lunch*

Image Processing and Data Analysis, Chairman: O. Salvetti

- 14.30 **X. Maldague** (GEL-GIF, Univ. Laval, Canada) (*invited lecture*)
Infrared image processing and data analysis
- 15.00 **P.G. Bison, E. Bozzi, M. Chimenti, E. Grinzato, S. Marinetti, O. Salvetti** (ITC-CNR; ISTI-CNR, Italy)
Statistical analysis of IR thermographic sequences
- 15.20 **H. Madura, R. Dulski, M. Dabrowski** (MUT-IO, Poland)
Simulations of radiative properties of a helicopter in IR
- 15.40 **M. Chimenti, C. Di Natali, G. Mariotti, E. Paganini, G. Pieri, O. Salvetti** (ISTI-CNR; ENEL, Italy)
An IR image processing approach for characterising combustion instability
- 16.00 *Coffee Break*

Non-Destructive Evaluation, Chairman: X. Maldague

- 16.20 **G.M. Carlomagno, C. Meola** (DETEC, Univ. of Naples, Italy)
The use of infrared thermography for non-destructive evaluation of joints
- 16.40 **E. Grinzato, S. Marinetti, P.G. Bison, M. Concas, S. Fais** (ITC-CNR; DGTA, Univ. of Cagliari, Italy)
Comparison of ultrasonic velocity and IR thermography for the characterisation of stones
- 17.00 **E. Rosina, N. Ludwig, V. Redaelli, F. Augelli** (DCSA, Polit. of Milan; IFGA, Univ. of Milan; DP, Polit. of Milan, Italy)
IRT quantitative methods for moisture detection in traditional buildings materials: wood and plaster
- 17.20 **G. Carlomagno, L. Capozzo, G. Attolico, A. Distante** (ISSIA-CNR, Italy)
Non-destructive grading of peaches by near-infrared spectrometry
- 17.40 **P. Menesatti, L. Scarpato, S. Solaini** (ISMA, Italy)
Spectrophotometric applications for quality evaluation of food products and agricultural production factors
- 20.30 *Social Dinner*

Thursday, September 11

Thermo-fluid-dynamics Chairman: C. Corsi

- 9.30 **G.M. Carlomagno** (DETEC, Univ. of Naples, Italy) (*invited lecture*)
Thermo-fluid-dynamics of a complex fluid flow

Far Infrared, Chairman: C. Corsi

- 10.00 **P. De Bernardis** (DF, Univ. Roma “La Sapienza”, Italy) (*invited lecture*)
Advanced bolometric detectors for far-IR and mm-waves, and their use in astrophysics
- 10.30 **M. Mlynczak et al.** (NASA, USA)
The Far-Infrared Spectroscopy of the Troposphere (FIRST) Project
- 11.00 *Coffee Break*

Remote Sensing, Chairman: I. Pippi

- 11.20 **A. Barducci, D. Guzzi, P. Marcoionni, I. Pippi** (IFAC-CNR, Italy)
Comparison of fire temperature retrieved from SWIR and TIR hyperspectral data
- 11.40 **M. Benvenuti, E. Carnier, V. Volpini** (ENVITECH; TD GROUP, Italy)
SIRIO: a new integrated system for infrared environmental monitoring
- 12.00 **A. Muscio, M.A. Corticelli** (DIMEC, Univ. of Modena and Reggio Emilia, Italy)
Mine detection by infrared thermography: reduction of size of the experiments

12.20 *Lunch*

Medical Applications, Chairman: E. Grinzato

- 14.00 **A. Di Carlo** (S. Gallicano Dermat. Inst. for Res. and Care, Italy) (*invited lecture*)
Telethermography with the thermostimulus technique
- 14.30 **G. Pari, L. Visani, G. Lo Bianco, M. Buda, E. Sulay** (CMD, Italy)
Telethermometry in diagnosis and follow-up of neuropatic pain
- 14.50 **G. Pari, L. Visani, G. Lo Bianco** (CMD, Italy)
Possible correlations among telethermometry, neurometry and electromyography in periferic neuropatic pain
- 15.10 **G. Giovannetti, R. Francesconi, V. Hartwig, M. Mochi, L. Landini, A. Benassi** (IFCA-CNR; DII, Univ. of Pisa, Italy)
A portable IR sensor for the coronary blood flow detection
- 15.30 **H. Madura, M. Dabrowski, R. Dulski** (MUT-IO, Poland)
Thermographic method for evaluation of thermal influence of Nd:YAG laser on external surfaces of a tooth root
- 15.50 *Coffee Break*

Closing Session