



SYMPOSIUM D

Photon-induced Material Processing

May 30 – June 2, 2000

Symposium Organizers:

Dave H.A. Blank, Research Institute MESA+ University of Twente,
Enschede, The Netherlands

Abdelilah Slaoui, PHASE, CNRS, Strasbourg, France

Patrik Hoffmann, EPFL, Lausanne, Switzerland

Ian W Boyd, University College London, London, U.K.

Symposium Support:

J.I.P.Elec, France

Papers will be published in Applied Surface Science

E-MRS 2000 SPRING MEETING

SYMPOSIUM D

Tuesday May 30, 2000

Mardi 30 mai 2000

Morning

Matin

Session I - Photon Induced Material Deposition I

Chairperson : A.M. Stoeneham

- D-I.1** 9:00 **Invited** FUNDAMENTAL SURFACE PROCESSES IN ADVANCED PHOTON PROCESSING, **R. M. Osgood, Jr.**, Columbia University, Columbia Radiation Laboratory, New York, NY, USA
- D-I.2** 9:30 LASER-ASSISTED METAL DEPOSITION FROM LIQUID-PHASE PRECURSORS ON POLYMERS, **K. Kordas**^(1,2), **L. Nanaï**⁽³⁾, **J. Bekesi**⁽¹⁾, **G. Galbacs**⁽⁴⁾, **S. Leppävuori**⁽²⁾, **A. Uusimaeki**⁽²⁾, **K. Bali**⁽¹⁾, **T.F. George**⁽⁵⁾, ⁽¹⁾Department of Experimental Physics, University of Szeged, Dom tér 9, 6720 Szeged, Hungary, ⁽²⁾Microelectronics and Material Physics Laboratories and EMPART research group of Infotech Oulu, University of Oulu, PL 4500, 90570 Oulu, Finland, ⁽³⁾Department of Physics, Gyula Juhász College of Ped., University of Szeged, Boldogasszony sgt. 6, 6720 Szeged, Hungary, ⁽⁴⁾Department of Inorganic and Analytical Chemistry, University of Szeged, Dom tér 7, 6720 Szeged, Hungary, ⁽⁵⁾Office of the Chancellor / Departments of Chemistry and Physics & Astronomy, University of Wisconsin-Stevens Point, Stevens Point WI 54481-3897, USA
- D-I.3** 9:50 FAST SELECTIVE METAL DEPOSITION ON POLYMERS BY USING IR AND EXCIMER VUV PHOTONS, **H. Esrom**, University of Applied Sciences, 68163 Mannheim, Windeckstraße 110, Germany
- D-I.4** 10:10 LOCAL LASER-ASSISTED CHEMICAL VAPOR DEPOSITION OF DIAMOND, **Z. Toth**, **A. Mechler** and **P. Heszler**, USz. Research Group on Laser Physics of the Hungarian Academy of Sciences, P.O. Box 406, 6701 Szeged, Hungary
- 10:30 **BREAK**

Session II - Photon Induced Material Deposition II

Chairperson: **W. Biegel**

- D-II.1** 11:00 **Invited** HIGH-INTENSITY SOURCES OF INCOHERENT UV AND VUV EXCIMER RADIATION FOR LOW TEMPERATURE MATERIAL PROCESSING, **U. Kogelschatz**, ABB Corporate Research Ltd, 5405 Baden, Switzerland
- D-II.2** 11:30 PHOTO-DEPOSITION OF TANTALUM PENTOXIDE FILM USING 222 NM EXCIMER LAMPS, **Jun-Ying Zhang** and **I.W Boyd**, Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- D-II.3** 11:50 SILICA FILM PREPARATION BY CHEMICAL VAPOR DEPOSITION USING VACUUM ULTRAVIOLET EXCIMER LAMPS, **K. Kurosawa**, **N. Takezoe**, **H. Yanagida**, Institute for Molecular Science, Okazaki, 444-8585 Japan, **J. Miyano**, **Y. Motoyama**, **K. Toshikawa**, Miyazaki OKI Electric Co. Ltd., Japan and **Y. Kawasaki**, **A. Yokotani**, Univ. of Miyazaki, Japan
- D-II.4** 12:10 SILICON DIOXIDE FILMS FORMED DURING ANNEALING OF TANTALUM PENTOXIDE FILM, **Jun-Ying Zhang** and **I.W Boyd**, Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- 12:30 **LUNCH**

Tuesday May 30, 2000

Mardi 30 mai 2000

Afternoon

Après-Midi

Session III - Photon Induced Material Modifications I

Chairperson: A. Luches

- D-III.1** 14:00 **Invited** NICKEL-ZINC FERRITE FILMS BY PHOTOCONVERSION OF SOL GEL PRECURSORS, **R.E. Van de Leest**, VITO, Boeretang 200, 2400 Mol, Belgium and F. Roozeboom, Philips Research Labs, Prof. Holstlaan 4, 5656 AA Eindhoven, The Netherlands
- D-III.2** 14:30 TAILORING NANOPARTICLES OF AROMATICS AND DYE MOLECULES BY EXCIMER LASER IRRADIATION, Yoshiaki Tamaki, Tsuyoshi Asahi, Hiroshi Masuhara, Dept. of Appl. Phys., Osaka Univ. Suita 565-0871, Japan
- D-III.3** 14:50 FABRICATION OF MICROLENSES BY DIRECT PHOTO-INDUCED CROSSPOLYMERIZATION, C. Croutxé-Barghorn, O. Soppera, D.J. Loughnot, Département de Photochimie Générale, E.N.S.C., 3 rue A. Werner, 68093 Mulhouse Cedex, France
- D-III.4** 15:10 VARIOUS STRUCTURAL CHANGES IN SiO₂ INTRODUCED BY ONE-PHOTON EXCITATION WITH UNDULATOR AND TWO-PHOTON EXCITATION WITH EXCIMER LASER, Koichi Awazu, Quantum Radiation Division, Electrotechnical Laboratory, 1-1-4, Umezono, Tsukuba 305-8568 Japan
- 15:30 **BREAK**

Session IV - Photon Induced Material Modifications I

Chairperson : R.M. Osgood

- D-IV.1** 16:00 **Invited** MATERIALS MODIFICATION BY ELECTRONIC EXCITATION, **A.M. Stoneham**, Centre for Materials Research, Department of Physics and Astronomy, University College London, London WC1E 6BT, UK
- D-IV.2** 16:30 PHOTO-INDUCED ULTRATHIN ELECTROPOLISHING LAYERS ON SILICON: FORMATION, COMPOSITION AND STRUCTURAL PROPERTIES, H. Jungblut, S. Rauscher, S. Schweizer, H.J. Lewerenz, Hahn-Meitner-Institut Berlin GmbH, Dept Solar Energy, Glienicker str. 100, 14109 Berlin, Germany
- D-IV.3** 16:50 LASER SYNTHESIS OF IRON DISILICIDES AND THEIR APPLICATION FOR PHOTO-THERMO-TENSOCONVERTERS, S.A. Mulencko, M.M. Nishchenko, Institute for Metal Physics NAS of Ukraine, 03142 Kiev, Ukraine and N.T.Gorbachuk, Kiev State University of Technologies and Design, 03011 Kiev, Ukraine
- D-IV.4** 17:10 APPLICATION OF NEAR INFRARED PYROMETRY FOR CONTINUOUS Nd:YAG LASER WELDING OF STAINLESS STEEL AND TITANIUM PLATES, I. Smurov⁽¹⁾, Ph Bertrand⁽²⁾ and D. Grevey⁽³⁾, ⁽¹⁾ENISE, 42023 Saint-Etienne Cedex 2, France, ⁽²⁾IMP-CNRS, BP 5, 66125 Odeillo, France, ⁽³⁾L.T.M., 12 rue de la Fonderie, 71200 Le Creusot, France

- D-I/P1** THE FAR-SPREADING INFLUENCE OF WEAK PHOTON IRRADIATION ON THE PROPERTIES OF METALS AND SEMICONDUCTORS, D.I.Tetelbaum, V.A. Panteleev, M.V. Gutkin, A.Yu.Azov, Physico-Technical Research Institute of Nizhnii Novgorod State University, Gagarin prospect 23/3, 603600 Nizhnii Novgorod, Russia
- D-I/P2** SIMULATION OF PHASE TRANSITIONS IN GaAs HEATED BY COMBINED LASER RADIATION, S.P. Zhvavyi, O.L.Sadovskaya and G.D. Ivlev, Institute of Electronics, BNAS, 22 Logoiskii Trakt, 220090 Minsk, Belarus
- D-I/P3** PHOTOSHAKING IN POLYMER FILMS, O.B. Agashkin, A.B. Subbotin, G. Shinikulova, Kazakh National Technical University, Satpaev str. 22, Almaty, Kazakhstan
- D-I/P4** TEMPERATURE DYNAMICS OF LASER-INDUCED NANOSECOND MELTING OF SILICON, E.I. Gatskevich, G.D. Ivlev and D.N. Sharaev, Institute of Electronics, BNAS, 22 Logoiskii Trakt, 220090 Minsk, Belarus
- D-I/P5** PHOTOCHEMICAL REACTIONS OF ANTHRONE AND ITS DERIVATIVES IN THIN LAYER POLYDIMETHYLSILOXANE MATRIXES, S. Luzgarev, V. Denisov, J. Dudinova, P. Piven, Kemerovo State University, Krasnaya str. 6, 650043 Kemerovo, Russia
- D-I/P6** THE OXIDIZING OF THE THING THILMS OF METALS AND ALLOYS, A. M. Khoviv, L. V. Rudakova, Voronezh State University, Universitetskaya Sq. 1, 394693 Voronezh, Russia
- D-I/P7** RECRYSTALLISATION OF SINTERED AND POWDERED Al₂O₃ USING A HIGH POWER DIODE LASER, M.J.J. Schmidt, L. Li, Manufacturing Division, Department of Mechanical Engineering, University of Manchester, Institute of Science and Technology (UMIST), PO Box 88, Manchester M60 1QD, UK
- D-I/P8** LASER TREATMENT OF (100) CdTe, InAs, InSb AND GaAs SINGLE CRYSTAL SUFACES AT AIR, O.L.Prokopchuk and A.B.Danylov, State University "Lvivska Polytechnika", 79646 Lviv, Ukraine
- D-I/P9** PECULIARITIES OF PHOTOINDUCED OPTICAL ANISOTROPY IN SOLID POLYMER FILMS CONTAINING OF AZO-DYES, V.N. Ermakov, A.S. Trofimov, Bogolyubov Institute for Theoretical Physics, NASU, 03143 Kyiv, Ukraine
- D-I/P10** EXCIMER LASER TREATMENT OF PET BEFORE PLASMA METALLIZATION, S.Petit, P.Laurens, J.Amouroux, F. Arefi-Khonsari, CLFA, Arcueil, France
- D-I/P11** ULTRATHIN SILICON DIOXIDE FILMS GROWN BY PHOTO-OXIDATION OF SILICON USING 172 NM EXCIMER LAMPS, N. Kaliwoh, Jun-Ying Zhang and I. W Boyd, Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- D-I/P12** PHOTO-INDUCED PREPARATION OF (Ta₂O₅)_{1-x}(TiO₂)_x DIELECTRIC THIN FILMS USING SOL-GEL AND XENON EXCIMER LAMP PROCESSING, N. Kaliwoh, Jun-Ying Zhang and I. W Boyd, Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- D-I/P13** OPTICAL CHARACTERISATION OF LASER ACTIVATED CH₄ ATMOSPHERE ON SURFACE TREATED WC SUBSTRATES, E. Cappelli⁽¹⁾, S. Orlando⁽²⁾, ⁽¹⁾CNR-IMAI, P.O.B. 10, 00016 Monterotondo Scalo, Roma, Italy, ⁽²⁾CNR-IMS, P.O.Box 27, 85050 Tito Scalo, Potenza, Italy
- D-I/P14** SEM, XPS SURFACE ANALYSIS OF EXCIMER LASER IRRADIATED WC SUBSTRATES, E. Cappelli⁽¹⁾, S. Orlando⁽²⁾, F. Pinzari⁽¹⁾, ⁽¹⁾CNR-IMAI, P.O.B. 10, 00016 Monterotondo Scalo, Roma, Italy, ⁽²⁾CNR-IMS, P.O.Box 27, 85050 Tito Scalo, Potenza, Italy
- D-I/P15** PRODUCING 3-D HIGH TEMPERATURE/STRENGTH STAINLESS STEEL SOLID PARTS THROUGH LASER MACHINING OF METAL/POLYMER COMPOSITE MATERIAL, A. Slocombe, A. Taufik and L. Li, UMIST, Manchester, UK
- D-I/P16** LASER MACHINING CERAMIC/DYED POLYMER COMPOSITE MATERIAL, A.Slocombe, J.Clark and L. Li, UMIST, Manchester, UK

- D-I/P17** THE INFLUENCE OF SHIELD GASES ON THE SURFACE CONDITION OF LASER TREATED CONCRETE, J. Lawrence and L. Li, Manufacturing Division, Department of Mechanical Engineering, University of Manchester Institute of Science & Technology (UMIST), PO Box 88, Manchester, M60 1QD, UK
- D-I/P18** SURFACE CHARGE ANALYSIS CHARACTERISATION OF ULTRAVIOLET-INDUCED DAMAGE IN SILICON DIOXIDE AND SILICON NITRIDE DIELECTRICS, D.H. Korowicz, P.V. Kelly, K.F. Mongey and G.M. Crean, National Microelectronics Research Centre, University College, Lee Maltings, Prospect Row, Cork, Ireland
- D-I/P19** PULSED LASER IRRADIATION OF FULLERENE FILMS CONTAINING PALLADIUM CLUSTERS, L. Carrion⁽¹⁾, D. Vouagner⁽¹⁾, E. Czerwosz^(2,3), Cs. Beleznai^(1,4), J.P. Girardeau-Montaut⁽¹⁾, ⁽¹⁾Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard, Lyon 1, 43 bd du 11 novembre 1918, 69622 Villeurbanne Cedex, France, ⁽²⁾Institute of Experimental Physics and ⁽³⁾Institute of Vacuum Technology Warszawa, Poland, ⁽⁴⁾also Dept of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9, Hungary
- D-I/P20** IN-SITU MONITORING OF OPTICAL CHARACTERISTICS OF PULSED PICOSECOND LASER-IRRADIATED DIAMOND-LIKE CARBON THIN FILMS USING AN OPTICAL PARAMETRIC GENERATOR AND AMPLIFIER, L. Carrion⁽¹⁾, D. Vouagner⁽¹⁾, Cs. Beleznai^(1,2), J.P. Girardeau-Montaut⁽¹⁾, ⁽¹⁾Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard, Lyon 1, 43 bd du 11 novembre 1918, 69622 Villeurbanne Cedex, France, ⁽²⁾also Dept of Experimental Physics, Jozsef Attila University, 6720 Szeged, Dom t. 9, Hungary

Wednesday May 31, 2000

Mercredi 31 mai 2000

Afternoon

Après-Midi

Session V - Rapid Thermal Processing I

Chairperson: B. Lojek

- D-V.1** 14:00 **Invited** RAPID PHOOTHERMAL PROCESSING AS A SEMICONDUCTOR MANUFACTURING TECHNOLOGY FOR THE 21ST CENTURY, **R. Singh**, Holcombe Department of Electrical and Computer Engineering and Center for Silicon Nanoelectronics, Clemson University, Clemson SC 29634-0915, USA
- D-V.2** 14:30 LOCAL LASER INDUCED RAPID THERMAL OXIDATION OF SOI SUBSTRATES, M. Huber, R.A. Deutschmann, R. Neumann, K. Brunner and G. Abstreiter, Walter Schottky Institut, Technical University Munich, Am Coulombwall, 85748 Garching, Germany
- D-V.3** 14:50 PRODUCTION OF LOW COST CONTACTS AND JOINS FOR LARGE AREA DEVICES BY ELECTRODEPOSITION OF Cu AND Sn, J. Ferreira, H. Seiroco, R. Martins, E. Fortunato and F. Braz Fernandes, CENIMAT, FCT-UNL, Monte da Caparica 2825-114, Caparica, Portugal, A. P. Marvao, CSP, Charneca da Caparica, Portugal, J. I. Martins, FEUP, Porto, Portugal
- D-V.4** 15:10 DEFECTS AT THE INTERFACE OF ULTRATHIN VUV-GROWN OXIDE ON Si STUDIED BY ELECTRON SPIN RESONANCE, A. Stesmans and V. V. Afanas'ev, Department of Physics, University of Leuven, 3001 Leuven, Belgium
- 15:30 **BREAK**

Session VI - Rapid Thermal Processing II

Chairperson: R. Singh

- D-VI.1** 16:00 **Invited** PHOTON INDUCED ELECTRON-LATTICE INTERACTION AND IT'S IMPACT ON THE ATHERMAL ANNEALING OF IMPLANTED LAYERS, **B. Lojek**, ATMEL Corp., 1150 E. Cheyenne Mtn. Blvd., Colorado Springs CA 80906, USA
- D-VI.2** 16:30 HIGH SENSITIVITY IN SITU OPTICAL DIAGNOSTICS OF PULSED LASER CLEANING OF POLYMERIC SUBSTRATES, N. Chaoui⁽¹⁾, T. Fourier⁽²⁾, G. Schrens⁽²⁾, J. Solis⁽¹⁾, C.N. Afonso⁽¹⁾ and D. Bauerle⁽²⁾, ⁽¹⁾Instituto de Optica, CSIC, Serrano 121, Madrid, Spain, ⁽²⁾Institut für Experimental Physik, J. Kepler Universität, Altenbergen str. 69, 4040 Linz, Austria
- D-VI.3** 16:50 CORRELATION BETWEEN PHOTOLUMINESCENCE IN THE GAS PHASE AND GROWTH KINETICS DURING LASER INDUCED CHEMICAL VAPOR DEPOSITION, S. Tamir, Israel Institute of Metals, Haifa, Israel, S. Speiser, Faculty of Chemistry, Technion, Haifa, Israel and S. Berger, Faculty of Materials Engineering, Technion, Haifa, Israel
- D-VI.4** 17:10 EXCIMER LASER-INDUCED MELTING OF SINGLE CRYSTALLINE AND ION-AMORPHIZED SILICON LAYERS, G.D. Ivlev and E.I. Gatskevich, Institute of Electronics, BNAS, 22 Logoiskii Trakt, 220090 Minsk, Belarus
- 17:30-19:00 **POSTER SESSION II**

- D-II/P1** LIFETIME INVESTIGATION OF EXCIMER UV SOURCES, Jun-Ying Zhang and I.W Boyd, Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- D-II/P2** DOPED CHALCOGENIDE FILMS FOR X-RAY REGION OF SPECTRUM AND MICROLITHOGRAPHY, E. Gritsco, V. Rotaru, O. Corshac, Fototermoplastic Optical Data Recording Lab., State University of Moldova, 60 Mateevici st., 2009 Chisinau, Moldova
- D-II/P3** DESCRIPTION OF THE COHERENT AND INCOHERENT PROCESSES IN TWO-PHOTON PHOTOEMISSION IN Cu(111) SURFACE, Y. Dappe, A.A. Villaeys and F.P. Lohner, IPCMS, 23 rue du Loess, 67037 Strasbourg Cedex, France
- D-II/P4** STRUCTURAL AND OPTICAL CHARACTERIZATION OF HYDROGENATED CARBON NITRIDE THIN FILMS OBTAINED BY LASER-INDUCED CVD, A. Crunteanu^(1,2), M. Charbonnier⁽¹⁾, M. Romand⁽¹⁾, J. Mugnier⁽³⁾, R. Alexandrescu⁽²⁾, F. Vasiliu⁽⁴⁾, D. Pantelica⁽⁵⁾, ⁽¹⁾Laboratoire de Sciences et Ingénierie des Surfaces, Université Claude Bernard - Lyon 1, 69622 Villeurbanne Cedex, France, ⁽²⁾Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, P.O. Box MG-36, 76900 Bucharest, Romania, ⁽³⁾Laboratoire de Physico-Chimie des Matériaux Luminescents (CNRS, UMR5620) Université Claude Bernard - Lyon 1, 69622 Villeurbanne Cedex, France, ⁽⁴⁾Electron Microscopy Laboratory, National Institute for Materials Physics, P.O. Box MG-7, 76900 Bucharest, Romania, ⁽⁵⁾National Institute for Physics and Nuclear Engineering-NIPNE 'Horia Hulubei' P.O. Box MG-6, 76900 Bucharest, Romania
- D-II/P5** OPTICAL, ELECTRICAL AND MECHANICAL PROPERTIES OF LASER PHOTO-DEPOSITED HYDROGENATED CNX FILMS, A. Crunteanu^(1,2), M. Charbonnier⁽²⁾, M. Romand⁽²⁾, F. Vasiliu⁽³⁾, ⁽¹⁾Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, P.O. Box MG-36, 76900 Bucharest, Romania, ⁽²⁾Laboratoire de Sciences et Ingénierie des Surfaces, Université Claude Bernard - Lyon 1, 69622 Villeurbanne Cedex, France, ⁽³⁾Electron Microscopy Laboratory, National Institute for Materials Physics, P.O. Box MG-7, 76900 Bucharest, Romania
- D-II/P6** PHOTO-INDUCED DEPOSITION AND PROCESSING OF VARIABLE BAND GAP a-SiN:H ALLOY FILMS, N. Banerji, J. Serra, S. Chiussi, Univerdidad Vigo, Spain
- D-II/P7** PHOTO-ASSISTED MOCVD OF COPPER USING Cu(HFA)(COD) AS PRECURSOR, S. Vidal, F. Maury, A. Gleizes and C. Mijoule. CIRIMAT, CNRS/INPT, Ecole Nationale Supérieure de Chimie, 118 Route de Narbonne, 31077 Toulouse cedex 4, France
- D-II/P8** CRISTALLINITY OF TITANIA THIN FILMS DEPOSITED BY LICVD, E.Halary, G.Benvenuti, P.Hoffmann, Institute of Applied Optics, BM Swiss Federal Institute of Technology Lausanne, 1015 Lausanne – EPFL, Switzerland
- D-II/P9** TIME OF FLIGHT MASS SPECTROMETRY OF TITANIA PRECURSOR TTIP: GAS PHASE PHOTODISSOCIATION AND SURFACE LASER DESORPTION, G.Benvenuti⁽¹⁾, R. Beck⁽²⁾ P.Hoffmann⁽¹⁾, ⁽¹⁾Institute of Applied Optics and ⁽²⁾Laboratory of Molecular Chemical Physics, Swiss Federal Institute of Technology Lausanne, 1015 LAUSANNE – EPFL, Switzerland
- D-II/P10** PALLADIUM THIN FILM DEPOSITION FROM LIQUID PRECURSORS ON POLYMERS BY PROJECTED EXCIMER BEAMS, K. Kordas^(1,2), F. Ignacz⁽³⁾, L. Nanai⁽⁴⁾, S. Leppaeuori⁽²⁾, T.F. George⁽⁵⁾, K. Bali⁽¹⁾, ⁽¹⁾Department of Experimental Physics, University of Szeged, 6720 Szeged, Dom tér 9, Hungary, ⁽²⁾Microelectronics and Material Physics Laboratories and EMPART research group of Infotech Oulu, University of Oulu, PL 4500, 90570 Oulu, Finland, ⁽³⁾Department of Optics and Quantum Electronics, University of Szeged, 6720 Szeged, Dom tér 9, Hungary, ⁽⁴⁾Department of Physics, Gyula Juhász College of Ped., University of Szeged, 6720 Szeged, Boldogasszony sgt. 6, Hungary, ⁽⁵⁾Office of the Chancellor/Departments of Chemistry and Physics & Astronomy, University of Wisconsin-Stevens Point, Stevens Point, WI 54481-3897, USA
- D-II/P11** DETERMINATION OF THE ABSORPTION LENGTH OF CO₂ AND HIGH POWER DIODE LASER RADIATION FOR A SELECTED REFRACTORY MATERIAL, J.Lawrence and L. Li, Manufacturing Division, Department of Mechanical Engineering, University of Manchester Institute of Science & Technology (UMIST), PO Box 88, Manchester M60 1QD, UK
- D-II/P12** PHOTO-STIMULATED EFFECTS OF THE STRUCTURE IN HYDROGEN BONDED NETWORK, S. S.Rashidova, B. L.Oksengendler, N.N. Turaeva, Institute of Polymer Chemistry and Physics, Kadiry str.7B, 700128 Tashkent, Uzbekistan

- D-II/P13** STUDY OF FUEL DEGRADATION PROCESSES BY UV LASER TECHNIQUE, M. Rotel, S. Tamir, Israel Institute of Metal, Technion City, Haifa 32000, Israel. Y. Ben-Asher, Israel Institute of Petroleum and Energy, Tel-Aviv, Israel
- D-II/P14** PHOTOEMISSION CHARACTERISTICS OF DIAMOND FILMS, D. Vouagner⁽¹⁾, Y. Show⁽²⁾, J.P. Girardeau-Montaut⁽¹⁾, ⁽¹⁾Laboratoire de Sciences et Ingénierie des Surfaces (EA 1877), Université Claude Bernard, Lyon 1, 43 bd du 11 novembre 1918, 69622 Villeurbanne Cedex, France, ⁽²⁾Department of Electronics, Tokai University, 1117 Kitkaname, Hiratsuka, Kanagawa, Japan

Thursday June 1, 2000

Jeudi 1er juin 2000

Morning

Matin

Session VII - Pulsed Laser Deposition I

Chairperson: M. Stuke

- D-VII.1** 8:40 **Invited** SUPERCONDUCTING AND ELECTROOPTICAL THIN FILMS PREPARED BY PULSED LASER DEPOSITION TECHNIQUE, **J. Schubert**, M. Siegert, W. Zander, Judit Lisoni, Institut für Schicht- und Ionentechnik, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, M. Fardmanesh, Electrical and Electronics Engineering Department, Bilkent University, Ankara, Turkey and C. H. Lei, Institut für Festkörperforschung, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany
- D-VII.2** 9:10 PRECURSORS OF COPPER NITRIDE FILMS: LASER PHOTOIONIZATION OF $\text{Cu}(\text{NH}_3)_x$ CLUSTERS IN A SUPERSONIC BEAM, **A. Giardini Guidoni**⁽¹⁾, M. Satta⁽¹⁾, T. Di Palma⁽²⁾, A. Paladini⁽¹⁾, ⁽¹⁾Department of Chemistry, "La Sapienza" University, p.le A. Moro 5, 00185 Rome, Italy, ⁽²⁾CNR Istituto Materiali Speciali, Via S. Loja 16, 85100 Tito Scalo, PZ, Italy
- D-VII.3** 9:30 STUDY OF DOPED ZNO FILMS SYNTHESIZED BY COMBINING VAPOR GASES AND PULSED LASER DEPOSITION, **Shen Zhu**, USRA/SD47, NASA/Marshall Space Flight Center, Huntsville AL 35812, USA, C-H Su and S.L. Lehoczky, Science Directorate, NASA/Marshall Space Flight Center, Huntsville AL 35812, USA, M.A. George, Department of Chemistry, The University of Alabama, Huntsville, AL 35899, USA
- D-VII.4** 9:50 PULSED LASER DEPOSITION OF EPITAXIAL $\text{PbZr}_x\text{Ti}_{1-x}\text{O}_3$ FERROELECTRIC CAPACITORS WITH LaNiO_3 AND SrRuO_3 ELECTRODES, **C. Guerrero**, F. Sanchez, J. Roldán, M.V. Garcia-Cuenca, C. Ferrater and M. Varela, Universitat de Barcelona, Departament de Física Aplicada i Òptica, Avda. Diagonal 647, Barcelona 08028, Spain
- D-VII.5** 10:10 INFLUENCE OF PZT TEMPLATE LAYER ON PULSED LASER DEPOSITED PMN THIN FILMS, **P. Verardi**⁽¹⁾, M. Dinescu⁽²⁾, F. Craciun⁽¹⁾, L. Tapfer⁽³⁾, A. Tagliente⁽³⁾, R. Dinu⁽²⁾, ⁽¹⁾IDAC-CNR, Rome, Italy, ⁽²⁾IFA, NILPRP, Bucharest, Romania, ⁽³⁾PASTIS-CNRSM, Brindisi, Italy
- 10:30 **BREAK**

Session VII - Pulsed Laser Deposition II

Chairperson : R.E. Vand de Leest

- D-VIII.1** 11:00 **Invited** ELECTRONIC OXIDE FILM GROWTH FOR MICROELECTRONICS AND SUPERCONDUCTIVITY, **D.P. Norton**, C. Park, Y. Lee, J.D. Budai, M.F. Chisholm, D.K. Christen, A. Goyal and D.M. Kroeger, Oak Ridge National Laboratory, Solid State Division, P.O. Box 2008, MS-6056, Oak Ridge TN 37831-6056, USA
- D-VIII.2** 11:30 EFFECT OF LASER ABLATION AND POST-DEPOSITION CONDITIONS ON PHOTOLUMINESCENCE PROPERTIES OF Si-BASED NANOSTRUCTURES, A.V. Kabashin⁽¹⁾, M. Charbonneau-Lefort⁽¹⁾, M. Meunier⁽¹⁾ and R. Leonelli⁽²⁾, ⁽¹⁾Ecole Polytechnique de Montréal, Département de Génie Physique et de génie des matériaux, Case Postale 6079, succ. Centre-ville, Montréal (Québec), Canada, H3C 3A7, ⁽²⁾Université de Montréal, Département de Physique, C.P. 6128, succ. Centre-Ville, Montréal (Quebec), Canada H3C 3J7
- D-VIII.3** 11:50 MODIFICATION OF SILICON FILMS AND NANOSTRUCTURES DEPOSITION BY ELECTRIC FIELD DURING UV LASER ABLATION, **I. Ozerov**, L. Patrone, M. Sentis and W. Marine, Groupement Interdisciplinaire Ablation Laser et Applications, UMR CNRS 6631 et UMR CNRS 6594, Université de la Méditerranée (Aix-Marseille II), Faculté des Sciences de Luminy, Case 901, Marseille, France
- D-VIII.4** 12:10 IMPOSED LAYER-BY-LAYER GROWTH WITH PULSED LASER INTERVAL DEPOSITION, **G. Rijnders**, G. Koster, V. Leca, D. Blank and H. Rogalla, University of Twente, Faculty of Applied Physics, Low Temperature Division, Postbus 217, 7500 AE, Enschede, The Netherlands
- 12:30 **LUNCH**

Thursday June 1, 2000

Jeudi 1er juin 2000

Afternoon

Après-Midi

Session IX - Pulsed Laser Deposition III

Chairperson: C.N. Afonso

- D-IX.1** 14:00 **Invited** PULSED LASER DEPOSITION AND CHARACTERIZATION OF PEROVSKITE THIN FILMS ON VARIOUS SUBSTRATES, **W. Biegel**, R. Klarmann, B. Stritzker, Institut für Physik, Universität Augsburg, 86135 Augsburg, Germany and B. Schey, M. Kuhn, AxynTeC Dünnschichttechnik GmbH, 86159 Augsburg, Germany
- D-IX.2** 14:30 THIN TANTALUM AND TANTALUM OXIDE FILMS GROWN BY PULSED LASER DEPOSITION, **Jun-Ying Zhang** and Ian W Boyd, Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK
- D-IX.3** 14:50 INFLUENCE OF NITROGEN ON THE PHYSICO-CHEMICAL PROPERTIES OF AMORPHOUS CARBON FILMS PREPARED BY PULSED LASER DEPOSITION, F. Antoni, **E. Fogarassy**, T. Szorenyi, B. Prévot, CNRS-PHASE, BP 20, 67037 Strasbourg Cedex 2, France, S. Rey, F. Le Normand, IPCMS, BP 20, 67037 Strasbourg Cedex 2, France, P. Boher, SOPRA S.A., 26, rue Pierre Joigneaux, 92270 Bois-Colombes, France
- D-IX.4** 15:10 COMPARISON OF THE OPTICAL PROPERTIES OF ZnO THIN FILMS GROWN ON VARIOUS SUBSTRATES BY PULSED LASER DEPOSITION, **Sang Hyuck Bae⁽¹⁾**, Sang Yeol Lee⁽¹⁾, Hyun Young Kim⁽²⁾, Seongil Im⁽³⁾, ⁽¹⁾Department of Electrical and Computer Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea, ⁽²⁾Institute of Physics and Applied Physics, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea, ⁽³⁾Department of Physics, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea
- 15:30 **BREAK**

Session X - Pulsed Laser Deposition IV

Chairperson: David P. Norton

- D-X.1** 16:00 LOW TEMPERATURE GROWTH OF HIGH-K THIN FILMS BY ULTRAVIOLET-ASSISTED PULSED LASER DEPOSITION, **V. Craciun**, J. Howard, N. D. Bassim and R. K. Singh, Department of Materials Science and Engineering, University of Florida, Gainesville, USA, J. Perriere, Groupe des Physique de Solides, Universites Paris VII et VI, Paris, France
- D-X.2** 16:20 EXPANSION DYNAMICS OF THE PLASMA PRODUCED BY LASER ABLATION OF LiNbO₃ IN GAS ENVIRONMENT, J.A. Chaos, **J. Gonzalo**, C.N. Afonso, Instituto de Optica (CSIC), Serrano 121, 28006 Madrid, Spain
- D-X.3** 16:40 ULTRAVIOLET-ASSISTED PULSED LASER DEPOSITION OF THIN OXIDE FILMS, **V. Craciun*** and R.K. Singh, Department of Materials Science and Engineering, University of Florida, Gainesville, USA, *Institute of Atomic Physics, Bucharest, Romania
- D-X.4** 17:00 LASER DEPOSITION OF THIN SiO₂ AND ITO FILMS, S. Acquaviva, M.L. De Giorgi, L. Elia, M. Fernandez, G. Leggieri, A. Luches, **M. Martino** and A. Zocco, INFN and University of Lecce, Department of Physics, 73100 Lecce, Italy
- D-X.5** 17:20 DEPENDENCE OF NITROGEN CONTENT AND DEPOSITION RATE ON NITROGEN PRESSURE AND LASER PARAMETERS IN ArF EXCIMER LASER DEPOSITION OF CARBON NITRIDE FILMS, **T. Szörényi**, F. Antoni, E. Fogarassy, CNRS-PHASE, BP 20, 67037 Strasbourg Cedex 2, France, I. Bertóti, Chemical Research Center of the Hungarian Academy of Sciences, PO Box 17, 1525 Budapest, Hungary
- 17:40-19:00 **POSTER SESSION III**

- D-III/P1** INFLUENCE OF ATOMIC COLLISIONS IN VAPOUR PHASE ON PULSED LASER ABLATION, A.V. Gusarov, Baikov Institute of Metallurgy, Russian Academy of Sciences, Leninsky Prospect 49, 117911 Moscow, Russia, I. Smurov, Ecole Nationale d'Ingénieurs de Saint-Etienne, 58 rue Jean Parot, 42023 Saint-Etienne Cedex 2, France
- D-III/P2** INVESTIGATION OF CHARGED SPECIES BEHAVIORS IN $\text{YNi}_2\text{B}_2\text{C}$ LASER ABLATION, X. Wang, S. Amoruso, M. Armenante, R. Bruzzese, N. Spinelli and R. Velotta, Istituto Nazionale per la Fisica della Materia (INFN), Dipartimento di Scienze Fisiche, Università di Napoli Federico II, Via Cintia 26, 80126 Napoli, Italy, Dipartimento di Ingegneria e Fisica dell'Ambiente, Università della Basilicata, Via della Tecnica 3, 85100 Potenza, Italy, Istituto Nazionale di Fisica Nucleare, Via Cintia 26, 80126 Napoli, Italy
- D-III/P3** LASER-INDUCED EVAPORATION REACTIVITY AND DEPOSITON OF CeO_2 , V_2O_5 AND MIXED Ce-V OXIDES, C. Flamini, A. Ciccioi, A. Mele, Dipartimento di Chimica, Università "La Sapienza", p.le A. Moro 5, 00185 Rome, Italy, P. Traverso, F. Gneco, ICMN-CNR, Via dei Marini 6, Torre di Francia, 16149 Genova, Italy, A. Giardini Guidoni, CNR Istituto Materiali Speciali, 85100 Tito Scalo, PZ, Italy
- D-III/P4** DENSITY MEASUREMENTS OF REACTION PRODUCTS DURING REACTIVE LASER ABLATION USING LIF-, ABSORPTION- AND EMISSION SPECTROSCOPY, J. Hermann, C. Dutouquet, GREMI, Orléans University/CNRS, P.O. Box 6759, 45067 Orléans, Cedex 2, France
- D-III/P5** THIN FILMS OF Sr FERRITE PRODUCED BY LASER ABLATION DEPOSITION, C. Ristoscu, V. Nelea, C. Chiritescu, E. Gyorgy, I. N. Mihailescu, Institute of Atomic Physics, Bucharest, Romania, M. Koleva, P. Atanasov, R. Tomov, S. Zotova, Institute of Electronics, Tzarigradsko shosse 71, 1784 Sofia, Bulgaria
- D-III/P6** LASER ABLATION INDUCED FORMATION OF NANOPARTICLES AND NANOCRYSTAL NETWORKS, Z. Paszti, G. Peto, Z.E. Horvath, A. Karacs, MTA Research Institute for Technical Physics and Materials Science, 1525 Budapest, P.O.Box 49, Hungary
- D-III/P7** ROOM TEMPERATURE GROWTH OF INDIUM TIN OXIDE FILMS BY ULTRAVIOLET-ASSISTED PULSED LASER DEPOSITION, V. Craciun*, L. Rieth and R. K. Singh, Department of Materials Science and Engineering, University of Florida, Gainesville, USA, D. Craciun, *Institute of Atomic Physics, Bucharest, Romania
- D-III/P8** PULSED LASER DEPOSITION OF HYDROXYAPATITE THIN FILMS ON Ti AND Ti ALLOYS SUBSTRATES WITH AND WITHOUT BUFFER LAYERS, V. Nelea, C. Ristoscu, C. Chiritescu, C. Ghica, I.N. Mihailescu, Institute of Atomic Physics, Bucharest, Romania, A. Cornet, ENSAIS, Strasbourg, France
- D-III/P9** MODELLING OF GROWTH OF THIN SOLID FILMS OBTAINED BY PULSED LASER DEPOSITION, M. Bester, L. Pyziak, M. Kuzma, Institute of Physics, Higher Pedagogical School, Rejtana 16A, 35-959 Rzeszow, Poland, I. Virt, Section of Experimental Physics, Pedagogical University, Franco 34, 293-720 Drogobich, Ukraine
- D-III/P10** FABRICATION OF NOVEL 22 GHZ HAIRPIN TYPE HTS MICROSTRIP FILTER USING LASER ABLATED THIN FILMS, Cheol-Su Kim, Seok Cheon Song and Sang Yeol Lee, Department of Electrical and Computer Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul 120-749, Korea
- D-III/P11** OPTICAL CHARACTERIZATION OF THE PLUME PRODUCED BY ABLATION OF A $\text{Sm}_1\text{Ba}_2\text{Cu}_3\text{O}_{7-x}$ TARGET, A. Morone, S. Orlando, CNR - Istituto per i Materiali Speciali, Via S. Loja, Zona Industriale, 85050 Tito Scalo (PZ), Italy and C. Flamini, Dipartimento di Chimica dell'Università di Roma "La Sapienza", Piazzale Aldo Moro 5, 00185 Roma, Italy
- D-III/P12** OPTICAL CHARACTERISATION OF MULTILAYERED THIN FILMS BASED ON PULSED LASER DEPOSITION OF METAL OXIDES, V. Marotta, S. Orlando, G.P. Parisi, A. Giardini, CNR - Istituto per i Materiali Speciali, Via S. Loja, Zona Industriale, 85050 Tito Scalo (PZ), Italy and V. Capozzi, Dipartimento di Fisica dell'Università di Bari and Istituto Nazionale di Fisica della Materia, Via Amendola 173, 70126 Bari, Italy

- D-III/P13** EXPERIMENTAL STUDY ON DROPLET GENERATION DURING PULSED LASER DEPOSITION OF POLYETHYLENE GLYCOL 1000, T. Smausz⁽¹⁾, B. Hopp⁽²⁾, Cs. Vass⁽¹⁾, Z. Toth⁽²⁾, ⁽¹⁾Department of Optics and Quantum Electronics, SZTE University, 6701 Szeged, P.O.Box 406, Hungary, ⁽²⁾Research Group on Laser Physics of Hungarian Academy of Sciences, 6701 Szeged, P.O.Box: 406, Hungary
- D-III/P14** COMPARATIVE STUDY OF THE EXPANSION DYNAMICS OF Ga⁺ IONS IN LASER ABLATION OF Ga AND GaN USING TIME-RESOLVED EXTREME ULTRAVIOLET ABSORPTION SPECTROSCOPY, K.W. Mah, E. McGlynn, J.T. Costello, E.T. Kennedy, P. van Kampen and J.P. Mosnier, Centre for Laser Plasma Research, School of Physical Sciences, Dublin City University, Glasnevin, Dublin 9, Ireland and J. Castro, J.G. Lunney, Departement of Physics, Trinity College, Dublin 2, Ireland
- D-III/P15** ANGULAR DISTRIBUTION OF LASER DEPOSITED TI: SAPPHIRE FILMS, M.J.J. Schmidt, P.H. Key, Department of Applied Physics, The University of Hull, Hull HU6 7RX, UK
- D-III/P16** LASER-INDUCED NANO-ETCHING OF TUNGSTEN LAYERS, H. Schieche⁽¹⁾, K. Pigmayer⁽¹⁾, R. Chabircovsky⁽²⁾, ⁽¹⁾Angewandte Physik, Johannes-Kepler-Universität Linz, 4040 Linz, Austria, ⁽²⁾Institut für Allgemeine Elektronik und Quantenelektronik, TU Wien, 1040 Wien, Austria
- D-III/P17** NS RESOLUTION SCHLIJEREN-PHOTOGRAPHIC INVESTIGATION OF SURFACE PROCESSES DURING ArF LASER HEATING OF GRAPHITE, Zs. Marton⁽¹⁾, B. Hopp⁽²⁾, Z. Kantor⁽²⁾, Gy. Radnoczi⁽³⁾, O. Geszti⁽³⁾, P. Heszler⁽²⁾, ⁽¹⁾SZTE University, Department of Optics & Quantum Electronics, 6701 Szeged, P.O.Box: 406, Hungary, ⁽²⁾Research Group on Laser Physics of the Hungarian Academy of Sciences, 6701 Szeged, P.O.Box: 406, Hungary, ⁽³⁾Hungarian Academy of Sciences, Research Institute for Technical Physics and Materials Science, Structure Research Department, 1525 Budapest, P.O.Box 49, Hungary
- D-III/P18** VUV RADIATION INDUCED DESTRUCTION OF PERFLUORINATED POLYMER. ITS DEPENDENCE ON SPECTRA AND INTENSITIES OF RADIATION, V. E. Skurat and P. V. Samsonov, Institute of Energy Problems of Chemical Physics, Russian Academy of Sciences, 38 Leninskij prospect, Moscow, 117829, Russia
- D-III/P19** WETTABILITY MODIFICATIONS IN MICRO CHANNELS PRODUCED BY SCANNING EXCIMER LASER ABLATION, F. Wagner, P. Hoffmann, Institute of Applied Optics, EPFL, Lausanne, Switzerland
- D-III/P20** EXCIMER LASER INDUCED CHEMICAL ETCHING OF TRANSITION METALS, C. O'Driscoll, R.J. Winfield, P.V. Kelly and G.M. Crean, National Microelectronics Research Centre, University College, Lee Maltings, Prospect Row, Cork, Ireland
- D-III/P21** EXCIMER LASER STRUCTURING OF BULK POLYIMIDE MATERIAL, G.Daney, E.Spassova, J.Assa and J.Ihlemann⁽¹⁾, Central Lab.of Photoprocesses-Bulgarian Academy of Sciences, G.Bontchev-str, bl.109, 1113 Sofia, Bulgaria, ⁽¹⁾Laser-Laboratorium-Goettingen e.V, Hans-Adolf-Krebs-Weg 1, 37077 Goettingen, Germany
- D-III/P22** ISOTOPE RATIO MEASUREMENT BY TIME OF FLIGHT MASS SPECTROMETRY IN COMBINATION WITH LASER ABLATION. E. Vors, A. Semerok, J-F Wagner. CEA Saclay, DPE/SPCP/LSLA, 91191 Gif/Yvette, France
- D-III/P23** SPECTROSCOPIC CHARACTERISTICS OF THE PLUME GENERATED DURING LASER ABLATION OF A CERAMIC - POLYMER COMPOSITE, D.K.Y. Low, M.J.J. Schmidt, L. Li, Manufacturing Division, Department of Mechanical Engineering, University of Manchester Institute of Science and Technology (UMIST), PO Box 88, Manchester, M60 1QD, UK, P.J. Byrd, Manufacturing Technology, Rolls-Royce plc, PO Box 3, Filton, Bristol BS34 7QE, UK
- D-III/P24** VUV LASER ABLATION OF POLYMERS. PHOTOCHEMICAL ASPECTS, M.-C. Castex⁽¹⁾, N. Bityurin⁽²⁾, C. Olivero⁽¹⁾, S. Muraviov⁽²⁾, D. Riedel⁽¹⁾, ⁽¹⁾Laboratoire de Physique des Lasers, CNRS, University Paris XIII, 93430 Villetaneuse, France, ⁽²⁾Institute of Applied Physics, RAS, 603600, Nizhni Novgorod, Russia
- D-III/P25** ADVANCES IN CONTOUR AND HALF TONE MASK LASER ABLATION, A. Braun, K. Zimmer, F. Bigl, Institute of Surface Modification, Permoserstrasse 15, 04318 Leipzig, Germany

Friday June 2, 2000

Vendredi 2 juin 2000

Morning

Matin

Session XI - Photo-Induced Ablation I

Chairperson: J. Schubert

- D-XI.1** 8:30 Invited FORMATION OF CONES IN SILICON BY LASER-INDUCED ETCHING AND RE-DEPOSITION IN AN SF₆-RICH ATMOSPHERE, J.D. Fowlkes⁽¹⁾, S. Jesse⁽¹⁾, A.J. Pedraza⁽¹⁾ and D.H. Lowndes⁽²⁾, ⁽¹⁾ Department of Materials Science and Engineering, The University of Tennessee, Knoxville TN 37996-2200, USA, ⁽²⁾ Solid State Division, Oak Ridge National Laboratory, Oak Ridge TN 37831-6056, USA
- D-XI.2** 9:00 PHOTON-INDUCED MATERIAL PROCESSING, R. Roy, K. Cherian, A. Badzian, T. Schriempf, T. Petach, Applied Research Laboratory, The Pennsylvania State University, University Park PA 16802, USA
- D-XI.3** 9:20 ABLATION OF DIELECTRICS WITH AN ULTRASHORT PULSE, TUNABLE MID-INFRARED LASER, R.F. Haglund, Jr., D.R. Ermer, M.R. Papantonakis and O. Yavas, Vanderbilt University, Nashville TN 37235, USA
- D-XI.4** 9:40 ULTRA SHORT LASER PULSE INDUCED CHARGED PARTICLE EMISSION FROM WIDE BANDGAP CRYSTALS, M. Henyk, D. Wolfram, J. Reif, LS Experimentalphysik II, BTU Cottbus, Universitaetsplatz 3-4, 03044 Cottbus, Germany
- D-XI.5** 10:00 PULSED LASER ABLATION OF AlCuFe QUASICRYSTALS, R. Teghil, L. D'Alessio, M. Zaccagnino, M.A. Simone, Dipartimento di Chimica, Università di Basilicata, Potenza, Italy, D. Ferro, Centro Termodynamica Chimica Alte Temperature-CNR, Roma, Italy, C. Flamini, Dipartimento di Chimica, Università di Roma "La Sapienza", Roma, Italy, D.J. Sordelet, Department of Materials Science & Engineering, Ames Laboratory, Iowa State University, Ames, Iowa, USA
- 10:30 **BREAK**

Session XII - Photo-Induced Ablation II

Chairperson: S. Lazare

- D-XII.1** 11:00 PHOTOREFRACTIVE EFFECT IN NEMATIC LIQUID CRYSTALS, S. S. Slussarenko, Institute of Physics of National Academy of Sciences of Ukraine, Kiev, Ukraine
- D-XII.2** 11:20 POLYMERS DESIGNED FOR LASER MICROSTRUCTURING, A. Wokaun, T. Lippert, J. Wei, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland, N. Hoogen, O. Nuyken, Technical University, Munich, 84747 Garching, Germany
- D-XII.3** 11:40 POLYMER LASER PHOTOCHEMISTRY ABLATION, RECONSTRUCTION, POLYMERIZATION, H. Sato and S. Nishio, Laser Photochemistry Research Group, Faculty of Engineering, Mie University, Tsu 514-8507, Japan
- D-XII.4** 12:00 VUV EXCIMER LASER CHEMICAL PROCESSING OF POLYMERS AND MICROFIBERS, M. Koch, G. Padeletti, M. Lapczynska, M. Stuke, Max-Planck-Institute f. biophysikalische Chemie, P.O. Box 2841, 37018 Göttingen, Germany
- 12:30 **LUNCH**

Friday June 2, 2000

Vendredi 2 juin 2000

Afternoon

Après-Midi

Session XIII - Photo-Induced Ablation III

Chairperson : U. Kogelschatz

- D-XIII.1** 14:00 **Invited** MATRIX ASSISTED PULSED LASER EVAPORATION DIRECT WRITE (MAPLE DW): A NEW METHOD TO RAPIDLY PROTOTYPE SENSORS AND ELECTRONIC CIRCUIT ELEMENTS, **D.B. Chrisey**, A. Pique, J.M. Fitz-Gerald, R.C.Y. Auyeung, H.D. Wu, S. Lakeou and R.A. McGill, Naval Research Laboratory, Washington D.C., USA
- D-XIII.2** 14:20 PICOSECOND PULSED LASER ABLATION OF SILICON: A MOLECULAR-DYNAMICS STUDY, P. Lorazo⁽¹⁾, L. J. Lewis⁽²⁾ and M. Meunier⁽¹⁾, ⁽¹⁾Département de Génie physique et de génie des matériaux, Ecole Polytechnique de Montréal, ⁽²⁾Département de Physique, Université de Montréal, Canada
- D-XIII.3** 14:40 A MULTIFUNCTIONAL LASER LINKING AND CUTTING STRUCTURE FOR MICROELECTRONIC CIRCUITS, O. Mende, D. Niggemeyer, Laboratory of Information Technology, University of Hannover, Schneiderberg 32, 30167 Hannover, Germany
- D-XIII.4** 15:00 F2 LASER ETCHING OF GaN, T.Akane, K. Sugioka and K. Midorikawa, RIKEN (The Inst. Phys. Chem. & Res.), Hirosawa 2-1, Wako, Saitama 351-0198, Japan, N. Aoki and K. Toyoda, Sci. Univ. Tokyo, Yamazaki 2641, Noda, Chiba 278-8510, Japan
- D-XIII.5** 15:20 ZIRCONIUM CARBIDE THIN FILMS DEPOSITED BY PULSED LASER ABLATION, L. D'Alessio, M.A. Simone, R. Teghil, M. Zaccagnino, I. Zaccardo, Dipartimento di Chimica, Università della Basilicata, via N. Sauro 85, Potenza, Italy, V. Marotta, Istituto Materiali Speciali CNR, via S. Loja, Tito Scalo (PZ), Italy, D. Ferro, Centro per la Termodinamica Chimica alle Alte Temperature CNR, P.le A. Moro 5, Roma, Italy, G. De Maria, Dipartimento di Chimica, Università di Roma "La Sapienza", P.le A. Moro 5, Roma, Italy

END SYMPOSIUM D