



E-MRS Spring Meeting 2001
June 5 - 8, 2001

SYMPOSIUM P

Thin Film Materials for Photovoltaics

Symposium Organizers:

Christoph Brabec, Johannes Kepler University, Linz, Austria

Arnulf Jäger-Waldau, Hahn-Meitner-Institut, Berlin, Germany

Jef Poortmans, IMEC vzw, Leuven, Belgium

Abdelilah Slaoui, Laboratoire PHASE-CNRS, Strasbourg, France

Symposium Support :
AIXTRON AG, Germany
JIPElec, France

Papers will be published in Thin Solid Films

E-MRS 2001 SPRING MEETING

SYMPOSIUM P

Tuesday, June 5, 2001
Mardi 5 juin 2001

Morning
Matin

Session I: Materials Synthesis I

Session Chair: **M. Graetzel**, Swiss Federal Institute of Technology, Lausanne, CH

- P-I.1** 9:00 Invited MATERIALS FOR FULLERENE CONTAINING SOLAR CELLS, **J.C. Hummelen**, Stratingh Institute & Materials Science Center, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands
- P-I.2** 9:30 PRECURSOR ROUTES TOWARDS PPV DERIVATIVES: MECHANISTIC ASPECTS AND STRUCTURAL DEFECTS, **D. Vanderzande**, L. Hontis, H. Roex, E. Kesters, V. Vrindts, L. Lutsen, P. Adriaensens and J. Gelan, Limburg University, Institute of Material Research, Division Chemistry, Universitaire Campus; 3590 Diepenbeek, Belgium
- P-I.3** 9:45 ULTRAFAST ENERGY AND ELECTRON TRANSFER IN DONOR-ACCEPTOR MOLECULES FOR PHOTOVOLTAICS, **P.A. van Hal**, E. Peeters, R.A.J. Janssen, Laboratory of Macromolecular and Organic Chemistry, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands, G. Lanzani, G. Cerullo, C. Gadermaier, M. Zavelani-Rossi, S. Desilvestri, Istituto Nazionale per la Fisica della Materia, CEQSE-C.N.R., Dipartimento di Fisica, Politecnico, Milano, Italy, J. Knol, J.C. Hummelen, Stratingh Institute and Materials Science Center, Groningen University, Nijenborgh 4, 9747 AG Groningen, The Netherlands
- 10:00 **BREAK**

Session II: Materials Synthesis II
Session Chair: M.A. Contreras, NREL, Golden, USA
P. Roca i Cabarrocas, LPICM, Palaiseau, France

- P-II.1** 10:30 Invited WIDE GAP CHALCOPYRITES: MATERIAL PROPERTIES AND SOLAR CELLS, **S. Siebentritt**, Hahn-Meitner-Institut, Glienicker Str. 100, 14109 Berlin, Germany
- P-II.2** 11:00 AMMONIA FREE METHOD FOR PREPARATION OF CdS NANOCRYSTALLINE FILMS BY CHEMICAL SOLUTION DEPOSITION TECHNIQUE, **P. Nemeč**, Charles University Prague, Faculty of Mathematics and Physics, Ke Karlovu 3, 121 16 Prague 2, Czech Republic, **I. Nemeč**, Charles University Prague, Faculty of Science, Albertov 6, 120 00 Prague 2, Czech Republic, **P. Nahalkova**, **F. Trojaneč**, and **P. Maly**, Charles University Prague, Faculty of Mathematics and Physics, Ke Karlovu 3, 121 16 Prague 2, Czech Republic
- P-II.3** 11:15 HETEROEPITAXIAL GROWTH OF Cu(In,Ga)S₂ ON Si SUBSTRATES, **H. Metzner**, **U. Reislöhner**, **J. Cieslak**, **W. Witthuhn**, **Th. Hahn**, Institut für Festkörperphysik, Universität Jena, Max-Wien-Platz 1, 07743 Jena, Germany and **J. Kräuβlich**, Institut für Optik und Quantenelektronik, Universität Jena, Max-Wien-Platz 1, 07743 Jena, Germany
- P-II.4** 11:30 Invited ADVANCES IN SOLAR CELLS MADE WITH HOT WIRE CVD: SUPERIOR FILMS AND DEVICES AT LOW EQUIPMENT COST, **R.E.I. Schropp**, Debye Institute, Physics of Devices, Utrecht University, P.O. Box 80000, 3508 TA Utrecht, The Netherlands
- P-II.5** 12:00 HIGH QUALITY a-Si:H FILMS FOR SCHOTTKY BARRIER DEVICE APPLICATIONS, **H. Aguas**, **E. Fortunato**, **I. Ferreira**, **V. Silva**, **L. Pereira** and **R. Martins**, Departamento de Ciencia dos Materiais, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, 2825-114 Caparica, Portugal
- 12:15 **LUNCH**

Tuesday, June 5, 2001
Mardi 5 juin 2001

Afternoon
Après-midi

14:00-15:30 Poster Session

Poster Session 1 Material Synthesis

Session Chair: C. Brabec, LIOS, Linz, Austria

- P/P1.01** AN INTERDIFFUSION STUDY ON Cu-In-Se AND Cu-Ga-Se COMPOUNDS, C.H. Lin, G.P. Liu and B.H. Tseng, Institute of Materials Science and Engineering, National Sun Yat-Sen University, Kaohsiung 804, Taiwan
- P/P1.02** PREPARATION OF DITHIENOTHIOPHENE-S, S-DIOXIDE COPOLYMERS FOR PHOTOVOLTAICS, M. Catellani, B. Boselli, S. Luzzati, Istituto di Chimica delle Macromolecole - CNR, via Bassini 15, 20133 Milano, Italy
- P/P1.03** PREPARATION OF CuInSe₂ SOLAR CELL STRUCTURES BY WET CHEMICAL METHODS, M. Kemell, F. Dartigues*, M. Ritala and M. Leskelä, Department of Chemistry, P.O. Box 55, 00014 University of Helsinki, Finland, *Permanent address: Laboratoire de Physico-Chimie Moléculaire, Université Bordeaux I (UMR-5803 CNRS), 33405 Talence, France
- P/P1.04** COMPOSITION OF CuInS₂ THIN FILMS PREPARED BY SPRAY PYROLYSIS, M. Krunk, Q. Kijatkina, H. Rebane, I. Oja, Institute of Materials Technology, V. Mikli, Centre for Materials Research, A. Mere, Institute of Physics, Tallinn Technical University, Ehitajate 5, 19086 Tallinn, Estonia
- P/P1.05** THIN ZnS:Cu,Ga and ZnO:Cu,Ga FILMS PHOSPHORS, V.S. Khomchenko, V.P. Papusha, P.M. Lytvyn, Institute of Semiconductor Physics(ISP), NAS of Ukraine, Kyiv, Ukraine, Yu.A. Tzyrkunov, Special Technological and Design Office of ISP, Kyiv, Ukraine, T.G. Kryshab, Department of Material Sciences, ESFM, Institute Polytechnic National, Mexico D.F., Mexico
- P/P1.06** ONSET OF MICROCRYSTALLINITY IN SILICON THIN FILMS, C. Das and S. Ray, Energy Research Unit, Indian Association for the Cultivation of Science, Jadavpur, Calcutta 700 032, India
- P/P1.07** PULSED DC-MAGNETRON SPUTTERING OF MICROCRYSTALLINE SILICON, P. Reinig, F. Fenske, B. Selle and W. Fuhs Hahn-Meitner-Institut Berlin, Dep. Silicon-Photovoltaics, Kekuléstr.5, 12489 Berlin, Germany
- P/P1.08** NANO-CRYSTALLINE SILICON THIN FILMS PREPARED BY RADIO FREQUENCY MAGNETRON SPUTTERING, C. Goncalves, S. Charvet, A. Zeinert, M. Clin, K. Zellama, Université de Picardie Jules Verne, Faculté des Sciences, 33 rue St. Leu, 80039 Amiens, France
- P/P1.09** ORGANIC THIN FILMS FOR PHOTOVOLTAIC APPLICATIONS GROWN BY SEEDED SUPERSONIC MOLECULAR BEAMS, S. Iannotta, C. Corradi, M. Mazzola, T. Toccoli, CeFSA - CNR/ITC (research center on the physics of aggregates), Via Sommarie 18, 38050 Povo di Trento, Italy
- P/P1.10** ELABORATION BY REACTIVE MAGNETRON SPUTTERING AND CHARACTERIZATION OF Cu-Al-O TRANSPARENT THIN FILMS, B. Ismail, B. Rezig, Laboratory of Photovoltaic & Semiconductors Materials, PB37 Ecole National d'Ingénieurs de Tunis, Le belvedere, 1002 Tunis, Tunisie
- P/P1.11** SYNTHESIS AND PROPERTIES OF SUPRAMOLECULAR P-CONJUGATED OLIGOMERS AND POLYMERS, A. El-ghayoury, E. Peeters, A.P.H.J. Schenning, R.A.J. Jansen, E.W. Meijer, Laboratory of Macromolecular and Organic Chemistry, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
- P/P1.12** SUPRAMOLECULAR HYDROGEN BONDED POLYMERS IN PHOTOVOLTAIC CELLS, J.K.J. van Duren, P. Jonkheijm, A. El-Ghayoury, A.P.H.J. Schenning, E.W. Meijer, R.A.J. Janssen Laboratory for Macromolecular and Organic Chemistry, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands

- P/P1.13** HYDROGENATED AMORPHOUS SILICON GERMANIUM DEPOSITED AT HIGH RATE BY DC MAGNETRON SPUTTERING, A. Fedala, R. Cherfi and M. Aoucher, Laboratoire de Physique des Matériaux, Couches Minces et Semiconducteurs, Faculté des Sciences-Physique USTHB, BP 32 El Alia, 16111 Bab-Ezzouar, Alger, Algeria
- P/P1.14** MICROCRYSTALLINE Si THIN FILM GROWTH BY ECR PLASMA CVD AT LOW TEMPERATURES, S. Summers, S.J. Webb, L. Wang and H.S. Reehal, School of Electrical, Electronic and Information Engineering, South Bank University, London SE1 0AA, UK
- P/P1.15** A NEW WAY TO IMPROVE THE TRANSPORT PROPERTIES IN MICROCRYSTALLINE SILICON THIN FILMS DEPOSITED BY HOT-WIRE CHEMICAL VAPOR DEPOSITION, J.E. Bourée and C. Niikura, Laboratoire de Physique des Interfaces et des Couches Minces, CNRS UMR 7647, Ecole Polytechnique, 91128 Palaiseau Cedex, France
- P/P1.16** METASTABILITY IN AMORPHOUS SILICON WITH SMALL HYDROGEN CONTENT, S.M. Pietruszko, Institute of Microelectronics and Optoelectronics, Warsaw University of Technology, Warsaw, Poland, M. Urbanski, Faculty of Physics, Warsaw University of Technology, Warsaw, Poland
- P/P1.17** CHEMICAL BATH DEPOSITION OF ZINC SULPHIDE-BASED BUFFER LAYERS USING LOW TOXICITY MATERIALS, D.A. Johnston, M.H. Carletto, K.T.R.Reddy, I. Forbes, R.W. Miles, School of Engineering, University of Northumbria, Newcastle NE18ST, UK
- P/P1.18** COMPARATIVE STUDIES BETWEEN Cu-Ga-Se AND Cu-In-Se THIN FILM SYSTEMS, R. Caballero and C.Guillén, Departamento de Energías Renovables (Ciemat), Av. Complutense 22, 28040 Madrid, Spain
- P/P1.19** A-Si:H FILMS WITH ENHANCED PHOTOCONDUCTIVITY DEPOSITED BY THE TRIODE PECVD, O.A. Golikova, M.M. Kazanin, A.F. Ioffe Physicotechnical Institute, Polytechnicheskaya 26, 194021 St-Petersburg, Russia
- P/P1.20** AMORPHOUS SEMICONDUCTING DLC THIN FILM FROM CAMPHOR, Maheshwar Sharon(a), Debabrata Pradhan(a), Yoshinori Ando(b) and Xinluo Zhao(b), (a)Department of Chemistry, Indian Institute of Technology, Bombay 400 076, India, (b)Department of Physics, Meijo University, Tempaku-ku, Nagoya 468-8502, Japan
- P/P1.21** IN FLIGHT TREATMENT OF SILICON PARTICLES BY RF THERMAL PLASMA. ELABORATION OF SILICON DEPOSIT ON A SUBSTRATE, M. Benmansour, F. Bourg, E. Francke, D. Morvan, J. Amouroux, D. Ballutaud(a), Laboratoire de Génie des Procédés Plasmas, Université Pierre et Marie Curie, ENSCP, 11 rue Pierre et Marie Curie, 75231 Paris, France, (a)Laboratoire de physique des solides des bellevue, CNRS, 1 place Aristide Briand, 92195 Meudon Cedex, France
- P/P1.22** FORMATION OF POLYCRYSTALLINE SnS LAYERS BY A TWO-STEP PROCESS USING GRAPHITE BOX, K.T. Ramakrishna Reddy, P. Purandhara Reddy, Department of Physics, Sri Venkateswara University, Tirupati-517 502, India and R.W. Miles, P.K. Datta, School of Engineering, University of Northumbria, Newcastle, NE1 BST, UK
- P/P1.23** STUDY OF THE CONVERSIONPROCESS OF SULPHINYL PRECURSOR POLYMERS TO CONJUGATED MATERIALS WITH DIFFERENT TECHNIQUES, E. Kesters, L. Lutsen, D. Vanderzande, J. Gelan, T.P. Nguyen*, Dept. of Organic Chemistry, University of Limburg, Belgium, *Laboratoire de Physique Cristalline, Institut des Matériaux de Nantes, France
- P/P1.24** NEW SYNTHESIS OF A POLY(ARYLENE VINYLENE) DERIVATE : POLY[PARA-PHENYLENE- α -METHYLVINYLENE] MONOMER SYNTHESIS AND POLYMERISATION, D. Van Den Berghe, L. Lutsen, D. Vanderzande, J. Gelan, Laboratory of Organic and Polymer Chemistry, Limburg University, Institute for Material Research, Division Chemistry, Univ. Campus, 3590 Diepenbeek, Belgium
- P/P1.25** PROPERTIES OF ZINC SULPHUR SELENIDE DEPOSITED USING A CLOSE-SPACED SUBLIMATION METHOD, S. Armstrong, P.K. Datta and R.W. Miles, School of Engineering, University of Northumbria, Newcastle upon Tyne, NE1 8ST, UK

- P/P1.26** CdTe AND CdMnTe THIN FILMS DEPOSITED BY PULSED LASER ABLATION FOR SOLAR CELL APPLICATIONS, A.I. Savchuk, O.R. Klichuk, Ye.O. Kandyba, Dept. of Phys. Electronics, Chernivtsi National University, 58012 Chernivtsi, Ukraine, A. Perrone, A. Luches, M.L. DeGiorgi, Dept. of Physics, University of Lecce, National Institute of Matter Physics, 73100 Lecce, Italy and I.D. Stolyarchuk, Dept. of Theoretical Physics, Pedagogical University of Drohobych, 82100 Drohobych, Ukraine
- P/P1.27** INFLUENCE OF MOLECULE DWELL TIME ON $\mu\text{c-Si:H}$ PROPERTIES, U. Coscia, G. Ambrosone, P. Maddalena, S. Lettieri, INFN-DSF Università Federico II, via Cinthia, 80125 Napoli, Italy, M. Ambrico, CNR -CSCP Bari, C. Minarini, ENEA Portici, Italy
- P/P1.28** AMORPHOUS SILICON DEPOSITED BY HOT WIRE CVD FOR THE APPLICATION IN DUAL JUNCTION SOLAR CELLS, M.K. van Veen, and R.E.I. Schropp, Debye Institute, Department of Interface Physics, Utrecht University, PO Box 80.000, 3508 TA Utrecht, The Netherlands
- P/P1.29** MODELLING OF GROWTH OF CdTe THIN FILMS ON Al_2O_3 SUBSTRATES OBTAINED BY PULSED LASER DEPOSITION, M. Kuzma, M. Bester, L. Pyziak, I. Stefaniuk, Institute of Physics, Higher Pedagogical School, Rejtana 16A, 35-959 Rzeszow, Poland I. Virt, Section of Experimental Physics, Pedagogical University, Franco 34, 293-720 Drohobich, Ukraine
- P/P1.30** TEMPERATURE IMPROVEMENT OF THE OPTICAL AND ELECTRICAL PROPERTIES OF HYDROGENATED NANOSTRUCTURED SILICON THIN FILMS, A. Hadjadj and A. Beorchia, Dynamique des Transferts aux Interfaces, DTI, Université de Reims BP 1039, 51687 Reims Cedex 2, France, P. Roca i Cabarrocas, LPICM Ecole Polytechnique, 91128 Palaiseau Cedex, and L. Boufendi, GREMI Université d'Orléans BP 6759, 45067 Orléans Cedex 2, France
- P/P1.31** SINTERED SILICON'S COATS FOR PHOTOVOLTAIC APPLICATION, A. Straboni, E. Bere, P. Grosbras, D. Mencaraglia* and C. Bodin*, Laboratoire de Métallurgie Physique, Université de Poitiers, SP2MI, UMR 6630 CNRS, BP 179, 86960 Futuroscope cedex, France, *Laboratoire de Génie Électrique de Paris, LGEP-SUPÉLEC, UMR 8507 CNRS, Universités Paris VI et Paris XI, Plateau de Moulon, 91192 Gif-sur-Yvette Cedex, France
- P/P1.32** CREATION OF THE HETEROJUNCTION AND PERIODICAL STRUCTURES IN HgCdTe SOLID SOLUTION BY LASER ANNEALING, M. Pociask, E.M. Sheregii, Institute of Physics, Pedagogical University in Rzeszów, 35-310 Rzeszów, 16a Rejtana Str., Poland
- P/P1.33** CONTROLLED ARSENIC DIFFUSION IN EPITAXIAL $\text{Cd}_x\text{Hg}_{1-x}\text{Te}$ LAYERS IN THE EVAPORATION-CONDENSATION-DIFFUSION PROCESS, A. Vlasov, V. Pisarevskii, O. Storchu, A. Shevchenko, Lviv National University, 1 Univesitetska Str., 79000 Lviv, Ukraine, A. Barcz, Institute of Physics of Polish Academy of Sciences, 32/46 Al. Lotnikow, 02-668 Warsaw, Poland, A. Bonchuk, H. Pokhmurska, Institute for Applied Problems of Mechanics and Mathematics of NASU, 3-b Naukova Str., 79601 Lviv, Ukraine
- P/P1.34** OPTICAL PROPERTIES OF ZnSe THIN LAYERS ELECTROSYNTHESIZED AT HIGH TEMPERATURE – ROLE OF THE MOLTEN ELECTROLYTE COMPOSITION, S. Sanchez, C. Lucas, G.S. Picard, Laboratoire d'Electrochimie et Chimie Analytique, E.N.S.C.P., 11 rue Pierre et Marie Curie, 75005 Paris, France
- P/P1.35** LOW-RESISTIVITY SELF-SUPPORTING CUPROUS OXIDE FOIL REPAIRED BY AN OXIDATION-REDUCTION METHOD, T. Suehiro, E. Wakamatsu, T. Sasaki and Y. Hiratate, Tohoku Institute of Technology, Sendai 9828577, Japan
- P/P1.36** CdS AND CdTe LARGE AREA THIN FILMS PROCESSED BY RADIO-FREQUENCY PLANAR-MAGNETRON- SPUTTERING, H. Hernandez-Contreras, G. Contreras-Puente, J. Aguilar-Hernandez and O. Vigil-Galan*, Escuela Superior de Fisica y Matematicas del instituto Politecnico NacionaI, Edificio 9, Unidad Profesional Adolfo Lopez Materos, 07738 Mexico, D.F., *Permanent address: Facultad de Fisica-IMRE, Universidad de la Habana, 10400 La Habana, Cuba
Work partially supported by CONACyT-Mexico, project N° G27713A

- P/P1.37** INFLUENCE OF THE SUBSTRATE TEMPERATURE ON THE STRUCTURE AND THE OPTICAL PROPERTIES OF AMORPHOUS Si:H THIN FILMS PREPARED BY REACTIVE EVAPORATION, H. Rinnert, M. Vergnat, Laboratoire de Physique des Matériaux, (U.M.R. au C.N.R.S. No. 7556), Université Henri Poincaré Nancy 1, B.P. 239, 54506 Vandœuvre-lès-Nancy Cedex, France
- P/P1.38** GROWTH OF ORGANIC SEMICONDUCTORS FOR HYBRID SOLAR CELL APPLICATION, J. Ackermann, C. Videlot, A. El Kassmi, Laboratoire des Matériaux Moléculaires et des Biomatériaux, Université de la Méditerranée, 163 avenue de Luminy, 13288 Marseille Cedex 09, France
- P/P1.39** GROWTH AND CHARACTERIZATION OF PARA-SEXIPHENYL THIN FILMS ON MoSe₂ AND GeS SUBSTRATES, A. Andreev, C.J. Brabec, D. Meissner, N. S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, University Linz, A-4040 Linz, Austria; H. Sitter, G. Springholz, Institute for Semiconductor and Solid State Physics, University Linz, A-4040 Linz, Austria

15:30

BREAK

Session III: Materials Synthesis III

Session Chair: R. Schropp, Debye Institute, Utrecht, The Netherlands
J. Poortmans, IMEC, Leuven, Belgium

- P-III.1** 16:00 Invited PROBING EXTREMES FOR THIN FILM PV: VERY LOW-COST Si AND ULTRAHIGH EFFICIENCY III-V HETEROSTRUCTURES, **H.A. Atwater**, Thomas J. Watson Laboratory of Applied Physics California Institute of Technology, Pasadena CA 91125, USA
- P-III.2** 16:30 TRANSFER OF A THIN SILICON FILM ONTO A CERAMIC SUBSTRATE, C.S. Solanki, R.R. Bilyalov, J. Poortmans and J. Nijs*, IMEC vzw, Kapeldreef 75, 3001 Leuven, Belgium, *also Katholieke Universiteit Leuven, Electrotechnical Department, Leuven, Belgium
- P-III.3** 16:45 THE POTENTIAL OF BETA IRON-DISILICIDE THIN FILMS FOR SOLAR CELL APPLICATIONS, C.N. Mckinty, K.J. Kirkby and K.P. Homewood, University of Surrey, School of Electronics, Computing and Mathematics, Guildford, UK, S-P. Edwards and G. Shao, University of Surrey, School of Mechanical & Materials Engineering, Guildford, UK, R. Valizadeh and J.S. Colligon, Dept of Chemistry & Materials, Manchester Metropolitan University, Manchester, UK
- P-III.4** 17:00 Invited GROWTH AND OPTOELECTRONIC PROPERTIES OF POLYMORPHOUS SILICON THIN FILMS, **P. Roca i Cabarrocas**, LPICM Ecole Polytechnique, 91128 Palaiseau Cedex, France
- P-III.5** 17:15 METAL-INSULATOR TRANSITION AND BAND TAIL STATES IN PHOSPHORUS DOPED MICROCRYSTALLINE SILICON, P. Kanschäp, S. Brehme, K. Lips, and W. Fuhs, Hahn-Meitner-Institut Berlin, Abt. SE1, Kekuléstr. 5, 12489 Berlin, Germany
- P-III.6** 17:45 PHOTOINDUCED ELECTRON TRANSFER FROM A DITHIENO THIOPHENE-BASED POLYMER TO TiO₂, S. Luzzati, M. Basso, M. Catellani, ICM-CNR, via Bassini 15, 20133 Milano, Italy and D. Gebeyu, C. Brabec, N.S. Sariciftci, LIOS, Altenbergerstrasse 69, Linz 4040, Austria
- P-III.7** 18:00 INTERFACE MODIFICATION OF CuInS₂ THIN FILMS, M. Aggour, Ch. Murrell, H.J. Lewerenz, Hahn-Meitner-Institute, Glienicke Strasse 100, 14109 Berlin-Wannsee, Germany, P. Hoffmann, R. Mikalo, D. Schmeißer, Brandenburg Technical University of Cottbus, E.-W.-Str. 1, 03044 Cottbus, Germany
- P-III.8** 18:15 HALL EFFECT AND PHOTOLUMINESCENCE INVESTIGATION ON RF REACTIVELY SPUTTERED CuInS₂ THIN FILMS, Y.B. He, A. Polity, I. Österreicher, D. Pfisterer, H. R. Alves, and B. K. Meyer, I. Physikalisches Institut, Justus-Liebig-Universität Giessen, Heinrich-Buff-Ring16, 35392 Giessen

Wednesday, June 6, 2001
Mercredi 6 juin 2001

Afternoon
Après-midi

Joint Session of Symposium E and Symposium P

Session IV: Crystalline Si Thin Films I

Session Chair: T. Bruton, B.P., UK

A. Shah, IMT, University of Neuchâtel, CH

- P-IV.1** 14:00 -Invited- THIN CRYSTALLINE SILICON SOLAR CELLS—STATUS AND PERSPECTIVES, **G. Willeke**, Fraunhofer ISE, Oltmannsstr. 5, 79100 Freiburg, Germany
- P-IV.2** 14:30 SIMULATION OF THE CRYSTALLISATION AND STRESS INDUCED PLASTICITY OF SILICON RIBBONS ON SUBSTRATE, D. Franke, I. Steinbach, M. Appel, ACCESS e.V., Intzestrasse 5, 52072 Aachen, Germany
- P-IV.3** 14:45 SILICON SHEET FROM SILANE: FIRST RESULTS, C. Rodrigues Pinto, R.M. Gamboa, J.C. Henriques, J.M. Serra, J. Maia Alves and A.M. Vallera, Universidade de Lisboa, Departamento de Física /CCMM, 1749-016 Lisboa, Portugal
- P-IV.4** 15:00 Invited FUTURE CRYSTALLINE Si THIN FILMS ON FOREIGN SUBSTRATES, **R.B. Bergmann** and J.H. Werner, Institut für Physikalische Elektronik, Universität Stuttgart, Germany
- P-IV.5** 15:30 CRYSTALLINE SILICON THIN FILMS WITH POROUS Si BACKSIDE REFLECTOR, R. Bilvalov(a), J. Poortmans(a), O. Richard(a), H. Bender(a), M. Kummer(b), H. von Känel(b), (a)IMEC, Kapeldreef 75, 3001 Leuven, Belgium, (b)Laboratory for Solid State Physics, ETH-Zürich, 8093 Zürich, Switzerland
- P-IV.6** 15:45 MICROWAVE MOBILITY IN PROFILED POLY-Si THIN FILMS DEPOSITED ON GLASS BY HOT WIRE CVD, P.A.T.T. van Veenendaal(a) T.J. Savenije(b) J.K. Rath(a) and R.E.I. Schropp(a), (a)Debye Institute, Physics of Devices, Utrecht University, P.O. Box 80.000, 3508 TA Utrecht, The Netherlands; (b)Radiation Chemistry Department, IRI, Delft University of Technology, The Netherlands.
- 16:00 **BREAK**

Session V: Crystalline Si Thin Films II
Session Chair: H.A. Atwater, Caltech, Pasadena, USA

- P-V.1** 16:30 Invited MICROCRYSTALLINE SILICON AND “MICROMORPH” TANDEM SOLAR CELLS, Arvind Shah, J. Meier, E. Vallat-Sauvain, U. Kroll, N. Wyrsh and J. Guillet, Institute for Microtechnology (IMT), University of Neuchâtel, A.-L. Breguet 2, 2000
- P-V.2** 17:00 SPECTRAL PHOTORESPONSES AND ELECTRONIC PROPERTIES OF POLYMORPHOUS SILICON THIN FILMS, J.P. Kleider, M. Gauthier, C. Longeaud, D. Roy, Laboratoire de Génie Electrique de Paris (UMR 8507 CNRS), Supélec, 11 rue Joliot-Curie, Plateau de Moulon, 91192 Gif-sur-Yvette Cedex, France
- P-V.3** 17:15 EFFECT OF SMALL CRYSTAL SIZE AND SURFACE TEMPERATURE ON THE RAMAN SPECTRA OF AMORPHOUS AND NANOSTRUCTURED Si THIN FILMS DEPOSITED BY RADIOFREQUENCY PLASMAS, S. Huet, G. Viera, L. Boufendi, Université d'Orléans, GREMI, BP 6744, 45067 Orléans Cedex 2, France

17:30-19:00 **Poster Session**

Poster Session 2 Thin Films based Solar Cells
Session Chair: A. Slaoui, Laboratoire PHASE-CNRS, Strasbourg, France

- P/P2.01** BAND ENERGY DIAGRAM OF CdTe THIN FILM SOLAR CELLS, J. Fritsche, D. Kraft, A. Thißen, T. Mayer, A. Klein, W. Jaegermann, University of Technology, Materials Science Department, Surface Science Division, Petersenstrasse 23, 64287 Darmstadt, Germany
- P/P2.02** A TWO-DIMENSIONAL MODELING OF FINE-GRAINED POLYCRYSTALLINE SILICON THIN-FILM SOLAR CELLS, E. Christoffel, A. Zerga, S. Bourdais, M. Rusu and A. Slaoui, Laboratoire PHASE-CNRS, 23 rue du Loess, 67037 Strasbourg cedex 2, France
- P/P2.03** SLOW TRANSIENT PHENOMENA IN POLYMERIC CELLS, N. Camaioni, G. Casalbore-Miceli, G. Geri, Istituto CNR-FRAE, via P. Gobetti 101, 40129 Bologna, Italy and M.C. Gallazzi, Dipartimento di Chimica Industriale e Ingegneria Chimica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy
- P/P2.04** PHOTOELEMENTS BASED ON Cd-Te DIODES WITH SURFACE BARRIER, P.M. Gorley(a), M.V. Demych(a), P.P. Horley(a), V.P. Makhniy(a), R. Chiach(b), E. Beltowska-Lehman(c) and Z. Swiatek(c), (a)Chernivtsi National University, Chernivtsi, Ukraine, (b)Cracow University of Technology, Cracow, Poland, (c)Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Cracow, Poland
- P/P2.05** PHOTOELECTRIC PROPERTIES OF CADMIUM -ZINC TELLURIDE HETEROJUNCTIONS, P.M. Gorley(a), M.V. Demych(a), P.P. Horley(a), V.P. Makhniy(a), R. Chiach(b), E. Beltowska-Lehman(c) and Z. Swiatek(c), (a)Chernivtsi National University, Chernivtsi, Ukraine, (b)Cracow University of Technology, Cracow, Poland, (c)Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Cracow, Poland
- P/P2.06** SOLID-STATE ORGANIC SOLAR CELLS BASED ON CONJUGATED POLYMER AND DYE-SENSITIZED TiO₂ ELECTRODES, D. Gebeyehu, C. J. Brabec, N.S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Linz, Altenbergerstraße 69, 4040 Linz, Austria
- P/P2.07** PHOTOLUMINESCENCE STUDY OF CuGaSe₂ IN THE SUPERSTRATE CONFIGURATION OF THE SOLAR CELL, G. Orsal, M-C. Artaud, S. Duchemin, Centre d'Electronique et de Microoptoélectronique de Montpellier, C.N.R.S UMR 5507, Université Montpellier II, 34095 Montpellier cedex 05, France

- P/P2.08** HYDROGENATED AMORPHOUS SILICON FILMS WITH LOW DEFECT DENSITY PRODUCED BY ARGON DILUTION : APPLICATION TO SOLAR CELLS, P. Pratim Ray, P. Chaudhuri and P. Chatterjee, Energy Research Unit, Indian Association for the Cultivation of Science, Calcutta 700 032, India
- P/P2.09** LIGHT INDUCED CHANGES IN THE ELECTRICAL BEHAVIOR OF CdTe AND CIGS SOLAR CELLS, M. Köntges(a), R. Reineke Koch(a), P. Nollet(b), J. Beier(c), J. Parisi(d), (a) Institut für Solarenergieforschung GmbH (ISFH), Sokelantstr. 5, 30161 Hannover, Germany, (b)ELIS, University of Gent, Pietersnieuwstraat 41, 9000 Gent, Belgium, (c)Antec GmbH, Industriestr. 2-4, 65779 Kelkheim, Germany, (d)University of Oldenburg, Carl-von-Ossietzky-Str. 9-11, 26111 Oldenburg, Germany
- P/P2.10** LIGHT TRAPPING IN TEXTURED THIN CRYSTALLINE Si CELLS FABRICATED BY THE POROUS SILICON (PSI)PROCESS, R. Brendel, G. Müller, W. Kintzel, R. Auer, ZAE Bayern, Thermosensorik und Photovoltaik, Am Weichselgarten 7, 91058 Erlangen, Germany
- P/P2.11** COMPARISON OF STRUCTURAL AND ELECTRICAL PROPERTIES OF CIGS FOR SUBSTRATE AND SUPERSTRATE SOLAR CELLS, F.-J. Haug, D. Rudmann, A.N. Tiwari, H. Zogg, ETH Zürich, Laboratory for Solid State Physics, Thin Film Physics Group, Technoparkstrasse 1, 8005 Zurich, Switzerland, G. Bilger, University of Stuttgart, Institute of Physical Electronics, Pfaffenwaldring 47, 70569 Stuttgart, Germany
- P/P2.12** EXTRACTION OF BULK AND CONTACT COMPONENTS OF THE SERIES RESISTANCE IN ORGANIC BULK-DONOR-ACCEPTOR-HETEROJUNCTION CELLS, T. Aernouts, W. Geens, J. Poortmans, P. Heremans, S. Borghs, IMEC vzw, Kapeldreef 75, 3001 Leuven, Belgium
- P/P2.13** LASER ASSISTED CHEMICAL VAPOR DEPOSITION OF THICK POLY-Si LAYERS FOR SOLAR CELLS, D. Della Sala, S. Loreti, ENEA-Casaccia, Via Anguillarese 301, 00060 S. Maria di Galeria, Italy, L. Fornarini, I. Menicucci, A. Santoni ENEA-Frascati, Via E. Fermi 45, 00040 Frascati, Italy, P. Delli Veneri, C. Minarini, C. Privato, ENEA-Portici, Via Vecchio Macello snc, 80055 Portici, Italy
- P/P2.14** DRY CLEANING PROCESS OF CRYSTALLINE SILICON SURFACE IN a-Si:H/c-Si HETEROJUNCTION FOR PHOTOVOLTAIC APPLICATIONS, M. Tucci, E. Salurso, F. Varsano, F. Roca, ENEA Research Center, Localita Granatello, 80055 Portici (NA), Italy, F. Palma, Department of Electronic Engineering, via Eudossiana 18, 00184 Roma, Italy
- P/P2.15** DYE SENSITIZED TiO₂ FOR PHOTOVOLTAIC DEVICES: IS BROOKITE A CONTENDER?, M. Koelsch(a), S. Cassaignon(a), J.F. Guillemoles(b) and J.P. Jolivet(a), (a)Laboratoire de Chimie de la Matière Condensée (CNRS UMR 7574), Université Pierre et Marie Curie, tour 54-55, 5ème étage, case 174, 4 place Jussieu, 75252 Paris Cedex 05, France, (b)Laboratoire d'Electrochimie et de Chimie Analytique (CNRS UMR 7575), Ecole Nationale Supérieure de Chimie de Paris, 11 rue Pierre et Marie Curie, 75231 Paris Cedex 05, France
- P/P2.16** THE CHANGE OF THE ELECTRONIC PROPERTIES OF CIGS DEVICES INDUCED BY 'DAMP M. Wimbör, J. Wennerberg*; Faculty of Physics, Warsaw University of Technology, Koszykowa 75, 00-662 Warszawa; *Angstrom Solar Center, Uppsala University, P.O. Box 534, 751-21 Uppsala, Sweden
- P/P2.17** INFLUENCE OF DAMP HEAT TESTING ON THE ELECTRICAL CHARACTERISTICS OF Cu(In,Ga)(S,Se)₂ SOLAR CELLS, C. Deibel, V. Dyakonov, J. Parisi, Energy- and Semiconductor Research, University of Oldenburg, 26111 Oldenburg, Germany, S. Zweigart, Siemens AG, ZT EN 2, 81739 Munich, Germany, J. Palm, F. Karg, Siemens Solar GmbH, 81739 Munich, Germany
- P/P2.18** LOW-BAND GAP POLYMER PHOTOVOLTAIC CELLS, J.K.J. van Duren, A. Dhanabalan, P.A. van Hal, R.A.J. Janssen, Laboratory for Macromolecular and Organic Chemistry, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands

- P/P2.19** PHOTOINDUCED ELECTRON TRANSFER AND PHOTOVOLTAIC DEVICES OF A CONJUGATED POLYMER WITH PENDANT FULLERENES, A. Marcos Ramos, J.K.J. van Duren, R.A.J. Janssen, Laboratory for Macromolecular and Organic Chemistry, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands, M.T. Rispens, J.C. Hummelen, Stratingh Institute and Materials Science Center, Groningen University, Nijenborgh 4, 9747 AG Groningen, The Netherlands
- P/P2.20** LOW TEMPERATURE OBTENTION OF WIDE BAND GAP In₂S₃-xO_x THIN FILMS FOR BUFFER LAYER APPLICATION, N. Barreau, S. Marsillac, J.C. Bernede, GL-FSTN, BP 92208, 44322 Nantes cedex 3, France
- P/P2.21** SOL-GEL TiO₂ ANTIREFLECTIVE FILMS FOR TEXTURED MONOCRYSTALLINE SILICON SOLAR CELLS, G. San Vicente, A. Morales and M.T. Gutierrez, CIEMAT- Departamento de Energias Renovables, Avenida Complutense 22, 28040 Madrid, Spain
- P/P2.22** ELECTROCHEMICAL AND OPTICAL IMPEDANCE SPECTROSCOPY ON DYE-SENSITISED SOLAR CELLS, R.Sastrawan, R.Kern, J.Ferber, J.Luther, Materials Research Center, Stefan-Meier-Str. 21, 79104 Freiburg, Germany
- P/P2.23** STUDY OF CIGS/In(OH)_xS_y HETEROJUNCTIONS, R. Bayón and J. Herrero, Departamento de Energías Renovables (CIEMAT), Av. Complutense 22, 28040 Madrid, Spain
- P/P2.24** CONTRIBUTION OF ZnSe/CuGaSe₂ HETEROJUNCTION IN PHOTOVOLTAIC PERFORMANCES OF CHALCOPYRITE BASED SOLAR CELLS, M. Rusu, P. Gashin, A. Simashkevich, Department of Physics, State University of Moldova, 60 A. Mateevici Str., 2009 Chisinau, Moldova and S. Sadewasser, Th. Glatzel, A. Jäger-Waldau, Hahn-Meitner-Institut, Glienicke Str. 100, 14109 Berlin, Germany
- P/P2.25** HYDROGENATED AMORPHOUS SILICON CARBON ALLOYS FOR SOLAR CELLS G. Ambrosone, U. Coscia, S. Lettieri, P. Maddalena, INFN-Dipartimento di Scienze Fisiche, Via Cintia, 80125 Napoli, Italy, C. Privato, ENEA, via Vecchio Macello, 80055 Portici, Italy
- P/P2.26** MODELLING a-Si:H BASED p-i-n STRUCTURES FOR OPTICAL SENSOR APPLICATIONS, Yu. Vygranenko, M. Fernandes, P. Louro and M. Vieira, Electronics and Communications Dept., ISEL, R. Cons. Emí dio Navarro, 1949-014 Lisboa, Portugal
- P/P2.27** PEDT, A SOLID P-CONDUCTING POLYMER IN DYE-SENSITIZED TiO₂ SOLAR CELLS, U. Wuerfel, J. Wagner, J. Ferber, J. Luther, Freiburg Materials Research Center, Stefan-Meier-Str. 21, 79104 Freiburg, Germany
- P/P2.28** THE INFLUENCE OF THE AMORPHOUS SILICON DEPOSITION TEMPERATURE ON THE EFFICIENCY OF THE ITO/A-Si:H/C-Si HETEROJUNCTION SOLAR CELLS, A.G. Ulyashin, R. Job, M. Scherff, W.R. Fahrner, University of Hagen, LGBE, P.O. Box 940, 58084 Hagen, Germany
- P/P2.29** PHOTOVOLTAIC PROPERTIES OF CdTe HETEROJUNCTIONS USING CdO:Sn THIN FILMS GROWN BY CHEMICAL BATH DEPOSITION AND SPRAY PYROLYSIS, O. Vigil*, G. Contreras-Puente, R. Mendoza-Perez, H. Hernandez-Contreras, J. Vidal*, Escuela Superior de Física y Matemáticas del instituto Politecnico Nacional, Edificio 9, Unidad Profesional Adolfo Lopez Mateos, 07738 Mexico, D.F., L. Vaillant, Facultad de Física-IMRE, Universidad de la Habana, 10400 La Habana, Cuba, *Permanent address: Facultad de Física-IMRE, Universidad de la Habana, 10400 La Habana, Cuba
Work partially supported by CONACyT-Mexico, project N° G27713A
- P/P2.30** HIGH RESISTIVE p-i-n HETEROJUNCTION FOR OPTICAL APPLICATIONS, P. Louro, R. Schwarz, Yu. Vygranenko, M. Fernandes and M. Vieira, ISEL, Lisbon, Portugal; M. Schubert, IPE, Universität Stuttgart, Germany
- P/P2.31** PECULIARITIES OF p-n JUNCTIONS IN SEMICONDUCTORS WITH NON-MONOTONOUS SPATIAL DEPENDENCE OF ENERGY GAP, B.S. Sokolovskii, V.K. Pysarevskii, Ivan Franko National University, 49 Gen. Chuprynka Str., 79044 Lviv, Ukraine

- P/P2.32** OPTO-ELECTRONICAL AND ELECTRICAL CHARACTERISATION OF ANATASE TiO₂/α-SULPHATHIOPHENE SOLAR CELLS, C.L. Huisman, A. Goossens and J. Schoonman, Laboratory for Inorganic Chemistry, Faculty of Applied Sciences, Delft University of Technology, Julianalaan 136, 2628 BL Delft, The Netherlands
- P/P2.33** ON THE OPEN CIRCUIT VOLTAGE OF BULK-HETEROJUNCTION PLASTIC SOLAR CELLS, C.J. Brabec, A. Cravino, T. Fromherz, D. Meissner and N.S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Linz, 4040 Linz, Austria, M.T. Rispens and J.C. Hummelen, Stratingh Institute and MSC, University of Groningen, 9747 AG Groningen, The Netherlands
- P/P2.34** PHOTOPHYSICAL PROPERTIES OF A LOW BANDGAP CONJUGATED POLYMER FOR OPTOELECTRONIC DEVICES, C. Winder, C.J. Brabec, N.S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University of Linz, Altenbergerstr. 69, 4040 Linz, Austria, J.C. Hummelen, Stratingh Institute and Materials Science Center, University of Groningen, The Netherlands, R.A.J. Janssen, Laboratory of Macromolecular and Organic Chemistry, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands
- P/P2.35** ORGANIC SOLAR CELLS: MORPHOLOGY, STRUCTURE AND ELECTRICAL CHARACTERISTICS, C. Videlot, J. Ackermann, A. El Kassmi, P. Raynal, Laboratoire des Matériaux Moléculaires et des Biomatériaux, Université de la Méditerranée, UMR CNRS 6114, Case 901, 163 avenue de Luminy, 13288 Marseille Cedex 09, France
- P/P2.36** DIELECTRIC BARRIERS FOR FLEXIBLE CIGS SOLAR MODULES, K. Herz, F. Kessler, R. Wächter, M. Powalla, Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW), Hessbruehlstr. 21c, 70565 Stuttgart, Germany and J. Schneider, A. Schulz, U. Schumacher, Institut für Plasmaforschung (IPF) der Universität Stuttgart, Pfaffenwaldring 31, 70569 Stuttgart, Germany
- P/P2.37** FACILE MODULATION OF SINGLE SOURCE PRECURSORS: THE SYNTHESIS & CHARACTERISATION OF THE FIRST “LIQUID” SINGLE SOURCE PRECURSORS FOR DEPOSITION OF TERNARY CHALCOPYRITE THIN FILM MATERIALS, K.K. Banger, Ohio Aerospace Institute, Cleveland OH 44135, USA, J. Cowen, J. Harris, Dept. of Chemistry, Cleveland State University, Cleveland OH 44135, USA and A.F. Hepp, NASA Glenn, Cleveland, OH 44135, USA.

Thursday, June 7, 2001
Jeudi 7 juin 2001

Morning
Matin

Session VI: Defects & Stability

Session Chair: S. Siebentritt, HMI, Berlin, Germany

V. Dyakonov, University of Oldenburg, Germany

- P-VI.1** 8:30 Invited GRAIN BOUNDARIES AND IMPURITIES IN CdTe/CdS SOLAR CELLS, **K. Durose**, D. Boyle and M.A. Cousins, Department of Physics, University of Durham, South Rd, Durham DH1 3LE, UK
- P-VI.2** 9:00 Invited THE PUZZLE OF Cu(In,Ga)Se₂ SOLAR CELLS STABILITY, **J.F. Guillemoles**, Laboratoire d'Electrochimie et de Chimie Analytique, (UMR 7575), ENSCP, 11 rue Pierre et Marie Curie, 75231 Paris Cedex, France
- P-VI.3** 9:30 DEGRADATION OF BULK HETEROJUNCTION SOLAR CELLS OPERATED IN AN INERT GAS ATMOSPHERE: A SYSTEMATIC STUDY, **F. Padinger**(a), P. Denk(a), C.J. Brabec(b) and N.S. Sariciftci(b), (a)Quantum Solar Energy Linz, Austria, (b)Linz Institute for Organic Solar Cells, Physical Chemistry, J. Kepler University Linz, Austria
- P-VI.4** 9:45 LONG-TERM STABILITY OF DYE-SENSITISED SOLAR CELLS, **R. Kern**(a), J. Ferber(a), A. Hinsch(b), J. Kroon(b), J. Luther(a), A. Meyer(c), R.Sastrawan(a), I. Uhlendorf(d), (a)Materials Research Center, Stefan-Meier-Str. 21, 79104 Freiburg, Germany, (b)Netherlands Energy Research Foundation ECN, Westerduinweg 3, 1755 LE Petten, The Netherlands, (c)Solaronix SA, Rue de L'Ouriette 129, 1170 Aubonne, Switzerland, (d)Institut für Angewandte Photovoltaik INAP, Munscheidstr. 14, 45886 Gelsenkirchen, Germany
- P-VI.5** 10:00 WHY ARE CdTe/CdS SOLAR CELLS STABLE?, **I. Visoly-Fisher**, K.D. Dobson, K. Gartsman, G. Hodes and D. Cahen, Weizmann Institute of Science, Materials Interfaces, 76100 Rehovot, Israel
- 10:15 **BREAK**

Session VII: Characterizations I
Session Chair: O. Inganäs, IFM, Linköping, Sweden
J.F. Guillemoles, LECA, Paris, France

- P-VII.1** 10:30 Invited RECENT DEVELOPMENTS IN CONJUGATED POLYMER BASED "PLASTIC" SOLAR CELLS, **N.S. Sariciftci**, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University of Linz, 4040 Linz, Austria
- P-VII.2** 11:00 QUANTITATIVE STUDY OF ELECTRON TRANSPORT IN NANOSTRUCTURED MATERIALS BY MEANS OF TRANSIENT ABSORPTION SPECTROSCOPY, H. van 't Spijker, and **A. Goossens**, Laboratory for Inorganic Chemistry, Faculty of Applied Sciences, Delft University of Technology, Julianalaan 136, 2628 BL Delft, The Netherlands
- P-VII.3** 11:15 CHARGE TRANSPORT IN PI-CONJUGATED POLYMERS FROM EXTRACTION CURRENT TRANSIENTS, G. Juska, K. Arlauskas, M. Viliunas, and K. Genevicius, Department of Solid State Electronics, Vilnius University, Sauletekio al. 9, 2040 Vilnius, Lithuania and **R. Österbacka** and H. Stubbs, Department of Physics, Åbo Akademi University, Porthansgatan 3, 20500 Turku, Finland
- P-VII.4** 11:30 Invited ELECTRICAL STUDIES OF POLYMER-FULLERENE SOLAR CELLS, **V. Dyakonov**, I. Riedel, J. Parisi, Faculty of Physics, University of Oldenburg, 26111 Oldenburg, Germany, C.J. Brabec, N.S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University of Linz, Altenbergerstraße 69, 4040 Linz, Austria, J.C. Hummelen, Stratingh Institute and MSC, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands
- P-VII.5** 12:00 INFLUENCE OF POLYALKYLTHIOPHENE STEREOREGULARITY ON PHOTOVOLTAIC PROPERTIES IN P-N STRUCTURES, **C. Sentein**, V. Dumarcher, P. Raimond, C. Rosilio, L. Sicot, C. Fiorini, CEA Saclay, DRT/ DECS/ SE2M/ Organic Devices Group (LCO), Bâtiment 451, 91191 Gif-sur-Yvette Cedex, France
- P-VII.6** 12:15 OPTICAL AND ELECTROOPTICAL ABSORPTION IN CONDUCTING POLYMERS, **N. Kirova** and S. Brazovskii, Laboratoire de Physique Théorique et Modèles Statistiques, CNRS & Université Paris-Sud, Bat.100, 91405 Orsay cedex, France
- 12:30 **LUNCH**

Thursday, June 7, 2001
Jeudi 7 juin 2001

Afternoon
Après-midi

14:00-15:30 **Poster Session**

Poster Session 3 Characterizations

Session Chair: **J. Poortmans**, IMEC vzw, Leuven, Belgium

- P/P3.01** CHARACTERIZATION OF PbS THIN FILMS DEPOSITED BY SILAR TECHNIQUE, J. Puiso(a), S. Tamulevicius(a), S. Lindroos(b), Markku Leskelä(b), (a)Department of Physics, Kaunas University of Technology, Studentu 50, 3031 Kaunas, Lithuania, (b)Department of Chemistry, University of Helsinki, P.O. Box 55, 00014 Helsinki, Finland
- P/P3.02** ULTRAFAST CARRIER DYNAMICS IN CdSe NANOCRYSTALLINE FILMS ON CRYSTALLINE SILICON SUBSTRATE, P. Maly, F. Trojanek, P. Nemeč, Charles University Prague, Faculty of Mathematics and Physics, Ke Karlovu 3, 121 16 Prague 2, Czech Republic, T. Miyoshi, K. Yamanaka, Yamaguchi University, Tokiwadai 2-16-1, Ube, Yamaguchi 755-8611, Japan, K. Luterova, I. Pelant, Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnick· 10, 162 53 Prague 6, Czech Republic
- P/P3.03** ELECTRON DIFFRACTION AND HIGH-RESOLUTION TRANSMISSION MICROSCOPY STUDIES OF POLYMORPHOUS Si THIN FILMS DEPOSITED BY RADIOFREQUENCY DUSTY PLASMAS, G. Viera, S. Huet, L. Boufendi, Université d'Orléans, GREMI, BP 6744, 45067 Orléans Cedex 2, France
- P/P3.04** X-RAY, KINETIC AND OPTICAL PROPERTIES OF THIN CuInS₂ FILMS, P.M. Gorley(b), J. Gonzalez-Hernandez(a), P.P. Horley(b), O.M. Vartsabyuk(b) and Yu.V. Vorobiev(a), (a)CINVESTAV-IPN Unidad Queretaro, CP 76230, Queretaro, Qro., Mexico, (b)Chernivtsi National University, 2 Kotsyubynsky st., 58012 Chernivtsi, Ukraine
- P/P3.05** CHARACTERIZATION AND APPLICATION OF a-SiC_x:H FILMS FOR THE PASSIVATION OF THE c-Si SURFACE, M. Vetter, A. Orpella, J. Puigdollers, R. Alcubilla, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya, Gran Capitas/n. Modul C4. 08034 Barcelona, Spain, I. Martin, J. Pallares, L. Marsal, Escola Tecnica Superior d'Enginyeria, Departament d'Enginyeria Electronica, Universitat Rovira i Virgili, Autovia de Salou s/n, 43006 Tarragona, Spain
- P/P3.06** OPTICAL SWITCHING IN THIN-FILM ELECTROCHEMICAL CELLS EMPLOYING YTRIUM CATHODE, V.P. Parkhutik, E. Matveeva, Department of Materials Science, Technical University of Valencia, Cami de Verwa, s/n 46071 Valencia, Spain
- P/P3.07** OPTICAL AND STRUCTURAL INVESTIGATION OF ZnO THIN FILMS PREPARED BY CHEMICAL VAPOR DEPOSITION, M. Purica, E. Budianu, E. Rusu*, M. Danila, R. Gavrilă, National Institute for Research and Development in Microtechnologies PO Box.38-160, 72225, Bucharest, Romania, *Institute of Applied Physics, Academiei-Str.5, 2028 Chishinev, Republic of Moldavia
- P/P3.08** MORPHOLOGICAL CHARACTERIZATION OF POLY(3-OCTYLTHIOPHENE): PLASTICIZER: C60 BLENDS, N. Camaioni, Istituto CNR-FRAE, via P. Gobetti 101, 40129 Bologna, Italy, M. Catellani, S. Luzzati, Istituto CNR-ICM, via Bassini 15, 20133 Milano, Italy and A. Migliori, Istituto CNR-LAMEL, via P. Gobetti 101, 40129 Bologna, Italy
- P/P3.09** PHOTOLUMINESCENCE AND SUBBANDGAP ABSORPTION OF CuGaSe₂ THIN FILMS, A. Meeder, D. Fuertes-Marron, A.M. Sembian, A. Jäger-Waldau and M.Ch. Lux-Steiner, Hahn-Meitner-Institut GmbH, Abt. SE 2, Glienicke Str. 100, 14109 Berlin, Germany, V. Chu, Instituto de Engenharia de Sistemas e Computadores (INESC), Lisbon, Portugal, J.P. Conde, Dept of Materials Engineering, Instituto Superior Tecnico (IST), Lisbon, Portugal
- P/P3.10** PROPERTIES OF SILICON OVERSATURATED WITH IMPLANTED HYDROGEN, V.P. Popov, I.E. Tyschenko, L.N. Safronov, O.V. Naymova, I.V. Antonova, A.K. Gutakovskiy, A.B. Talochkin, Institute of Semiconductor Physics, Novosibirsk, Russia

- P/P3.11** PHOTOCONDUCTIVITY TECHNIQUES FOR DEFECT SPECTROSCOPY OF PHOTOVOLTAIC MATERIALS, R. Brüggemann, Fachbereich Physik, Carl von Ossietzky Universität Oldenburg, Germany
- P/P3.12** STUDY OF PHOTOCONDUCTIVE MoS₂ THIN FILMS OBTAINED AT LOW TEMPERATURE, N. Barreau, J.C. Bernede, GL-FSTN, BP 92208, 44322 Nantes cedex 3, France
- P/P3.13** RECOMBINATION OF ELECTRONIC EXCITATIONS IN REGIOREGULAR POLY(3-ALKYLTHIOPHENES), M. Westerling, R. Österbacka, and H. Stubb, Department of Physics, Åbo Akademi University, Porthansgatan 3, 20500 Turku, Finland
- P/P3.14** FEATURES OF RAMAN SPECTRA FOR CuInS₂, CuInSe₂ FILMS, A.M. Yaremko(a), K. Parlinski(b), J. Lazewski(b), M.Ya. Valakh(a), (a)Institute of Semiconductor Physics NASU, 03-028 Kiev, Ukraine; (b)Institute of Nuclear Physics, 31-342 Krakow, Poland
- P/P3.15** PHOTOVOLTAIC PROPERTIES OF CdTe THIN FILMS ON THE HETEROSTRUCTURE OF CdTe – ZnSe, J. Vaitkus, S. Otazhonov, Vilnius University, Semiconductors Physics Department, Vilnius, Lithuania, Ferghana University, Semiconductors Physics Department, Ferghana, Uzbekistan
- P/P3.16** PHOTOELECTRICAL AND NOISE PROPERTIES FILMS BASED ON HgCdTe, A.V. Voitsekhovskii, A.P. Kokhanenko, Tomsk State University, Department of Radiophysics, 36 Lenin ave, Tomsk 634050, Russia, I. Viti, M. Bilyk, Pedagogical University, Section of Experimental Physics, Franko st. 24, Drogobych 82100, Ukraine
- P/P3.17** DEFECTS INDUCED IN AMORPHOUS SILICON THIN FILMS BY LIGHT SOAKING, B. Pivac(a), I.Kovacevic(a), I. Zulim(b); (a)R. Boskovic Institute, P.O.Box 180, Zagreb; Croatia; (b)FESB, R. Boskovic a b.b., Split, Croatia
- P/P3.18** CALCULATIONS OF THE REFLECTANCE OF POROUS SILICON AND OTHER ANTIREFLECTION COATING TO SILICON SOLAR CELLS, V.M. Aroutiounian, K.R. Maroutyan and A.L. Zatikyan, Yerevan State University, 1 Manoukian St., Yerevan 375049, Armenia, C. Levy-Clement, Thiais, Paris, France and K.J. Touryan, National Renewable Energy Laboratory, Golden, Colorado, USA
- P/P3.19** MICROSTRUCTURAL CHANGES OF CdTe DURING THE ANNEALING PROCESS, A.J. Chapman, D.W. Lane, K.D. Rogers, Cranfield University, Shrivensham, UK, M.E. Ozsan, Teksolar Ltd, 41 Queen Elizabeth way, Woking. L. Peter, Department of Chemistry, University of Bath, UK
- P/P3.20** OPTOELECTRONIC PROPERTIES OF MICROCRYSTALLINE SILICON FILMS, F. Wünsch, G. Cittarella and M. Kunst, HMI, Glienickestr.100, 14109 Berlin, Germany
- P/P3.21** PHOTOSENSITIVE PROPERTIES OF ANODIC ALUMINA WITH EMBEDDED TiO₂ NANOPARTICLES, S. Lazarouk, S. Katsouba, Belarusian State University Informatics and Radioelectronics, P. Browka 6, 220027 Minsk, Belarus
- P/P3.22** DETERMINATION OF THE OPTICAL CONSTANTS OF SILICON OXYNITRIDE FILMS FOR OPTICAL COATINGS, R.J. Martí n-Palma, J.M. Martí nez-Duart, Departamento de Física Aplicada, Universidad Autónoma de Madrid, 28049 Madrid, Spain and R.A. Levy, Physics Department, New Jersey Institute of Technology, 323 King Boulevard, Newark NJ 07102, USA
- P/P3.23** A THEORETICAL EXPLANATION OF EXPERIMENTAL RESULTS OBTAINED ON LASER CRYSTALLIZED SILICON, M. Rutigliano, M. L. Addonizio, P. delli Veneri, A. Imparato, C. Privato, ENEA - CR Portici - Località Granatello, 80055 Portici, Italia
- P/P3.24** VIBRATIONAL EVIDENCE FOR PERCOLATIVE EFFECT IN Zn_{1-x}Be_xSe, M. Ajjoun, O. Pagès, J.P. Laurenti, IPC, Bd. Arago, 57078 Metz, France; D. Bormann, LPCIA, Rue Souvraz, 62037 Lens, France and C. Chauvet, E. Tournié, J.P. Faurie, CRHEA-CNRS, Rue Gregory, 06560 Valbonne, France

- P/P3.25** LO PHONON-PLASMON COUPLING IN N-doped $Zn_{1-x}Be_xSe/GaAs$ ($x \leq 0.31$), M. Ajjoun, O. Pagès, J.P. Laurenti, IPC, Bd. Arago, 57078 Metz, France, D. Bormann, LPCIA, Rue Souvraz, 62037 Lens, France and C. Chauvet, E. Tournié, J.P. Faurie, CRHEA-CNRS, Rue Gregory, 06560 Valbonne, France
- P/P3.26** SURFACE CHARACTERISATION OF $CuInS_2$ FILMS DEPOSITED BY RF REACTIVE SPUTTERING, Y. B. He, I. Österreicher, A. Polity, R. Gregor, and B. K. Meyer, I. Physikalisches Institut, Justus-Liebig-Universität Giessen, Heinrich-Buff-Ring 16, 35392 Giessen, Germany
- P/P3.27** STABILITY OF CRYSTALLINE LATTICE OF THE II-VI SEMICONDUCTORS SOLID SOLUTION, E.M. Sheregii(a), J. Polit(a), M. Pociask(a), P.G. Sydoruk(b), P. Gorley(c) and V. Frasunyak(c), (a)Institute of Physics, Pedagogical University in Rzeszów, Poland; (b)Drohobych Pedagogical University, Ukraine; (c)Chernivtsi Nationality University, Ukraine
- P/P3.28** INVESTIGATION OF THE TETRAHEDRIC STRUCTURE OF $Zn_xCd_yHg_{1-x-y}Te$ BY INFRARED SPECTROSCOPY, B.V. Robouch(a), J. Polit(b), E.M. Sheregii(b), E. Sciesinska(c), J. Sciesinski(c), A. Kisiel(d), (a)Ex-Associazione Euratom- ENEA sulla Fusione, (b)Institute of Physics, Pedagogical University Rzeszów, Poland, (c)The Henryk Niewodniczanski Institute of Nuclear Physics, Cracow, (d)Institute of Physics, Jagiellonian University Cracow, Poland
- P/P3.29** PHOTOINDUCED ELECTRON TRANSFER FROM PPV TO TiO_2 , M.M. Wienk, J.M. Kroon, ECN Solar Energy, P.O. Box 1, 1755 ZG Petten; B.M.W. Langeveld, TNO Industries, P.O. Box 6235, 5600 HE Eindhoven; P.A. van Hal, R.A.J. Janssen, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
- P/P3.30** STUDY OF THE DEFECTS STRUCTURE IN $a-Si:H$ FILMS USING THE POSITRON ANNIHILATION TECHNIQUE, A. Amaral, C. Nunes de Carvalho, G. Lavareda, CFM, Complexo I, IST/UTL, Av. Rovisco Pais, 1049-001 Lisboa, Portugal; P.M. Gordo, V.S. Subrahmanyam, C. Lopes Gil, A.P. de Lima, ICEMS, DF-UC, Rua Larga da Universidade, 3004-516 Coimbra, Portugal; M. Duarte Naia, Secção de Física da U.T.A.D., Quinta de Prados, Apartado 202, 5001-911 Vila Real, Portugal
- P/P3.31** ELECTRONMICROSCOPIC CHARACTERIZATION OF MICRO-CRYSTALLINE SILICON THIN FILMS DEPOSITED BY ECR-CVD, L. Sieber, N. Wanderka, I. Kaiser, W. Fuhs, Hahn-Meitner-Institut, Kekulestr. 5, 12489 Berlin, Germany
- P/P3.32** A STUDY OF THE TRANSPORT MECHANISMS IN CdTe HETEROJUNCTIONS VIA C-V AND I-V MEASUREMENTS, G. Contreras-Puente, O. Vigil*, R. Mendoza-Perez, H. Hernandez-Contreras, J. Vidal*, Escuela Superior de Física y Matemáticas del instituto Politécnico Nacional, Edificio 9, Unidad Profesional Adolfo López Mateos, 07738 Mexico D.F., L. Vaillant, Facultad de Física-IMRE, Universidad de la Habana, 10400 La Habana, Cuba, *Permanent address: Facultad de Física-IMRE, Universidad de la Habana, 10400 La Habana, Cuba
Work partially supported by CONACyT-Mexico, project N° G27713A
- P/P3.33** EBIC TECHNIQUE APPLIED TO POLYCRYSTALLINE SILICON THIN FILMS: MINORITY CARRIER DIFFUSION LENGTH IMPROVEMENT BY HYDROGENATION, D. Ballutaud(a), A. Rivière(a), S. Bourdais(b), M. Rusu(b), A. Slaoui(b), (a)Laboratoire de Physique des Solides et de cristallogénèse, CNRS, 1 Place Aristide Briand, 92195 Meudon Cedex, France, (b)Laboratoire PHASE-CNRS, 23 rue du Loess, 67037 Strasbourg, France
- P/P3.34** EFFECTS OF CRYSTALLINITY VS. STOICHIOMETRY OF $n-ZnO$ FILMS ON PHOTOCURRENT FROM $n-ZnO/p-Si$ DIODES, J.Y. Lee, S. Im, Institute of Physics and Applied Physics, Yonsei Univ., Seoul, 120-749, Korea
- P/P3.35** INVESTIGATION OF NANOSCALE PHASE SEPARATION IN PHOTOVOLTAIC CONJUGATED POLYMER / FULLERENE BLENDS BY AFM-SPECTROSCOPY, H. Hoppe, A. Andreev, C.J. Brabec and N.S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Linz, 4040 Linz, Austria; P. Hinterdorfer, Institute of Biophysics, Johannes Kepler University Linz, 4040 Linz, Austria; J.C. Hummelen, Stratingh Institute and Materials Science Centre, University of Groningen, 9747 AG Groningen, The Netherlands

P/P3.36 PHOTODOPING OF ZINC PHTHALOCYANINE: FORMATION, TRANSPORT AND ACTIVITY OF OXYGEN RADICALS IN PHTHALOCYANINE SOLAR CELLS, C.L. Huisman, A. Goossens and J. Schoonman, Laboratory for Inorganic Chemistry, Faculty of Applied Sciences, Delft University of Technology, Julianalaan 136, 2628 BL Delft, The Netherlands

15:30

BREAK

Session VIII: Characterizations II

Session Chair: K. Durose, University of Durham, UK

N.S. Sariciftci, LIOS, Linz, Austria

P-VIII.1 16:00 Invited NANOPATTERNED ORGANIC PHOTODIODES, **O. Inganäs**, T. Nyberg, G. Gigli, F. Zhang, Biomolecular and organic electronics, IFM, Linköping University, 582 46

P-VIII.2 16:30 XPS AND ELECTRICAL STUDIED OF BURIED INTERFACES IN CIGS SOLAR CELLS, B. Canava(a) J.Vigneron(a), A. Etcheberry (a), J.F Guillemoles(b), D. Lincot(b), S. Ould Saad Hamatly(c), Z. Djebbour(c), D. Mencaraglia(c), (a)IREM CNRS, Univ. de Versailles, 45 Ave des Etats Unis, 78035 Versailles, France, (b)LECA-CNRS, ENSCP, 11 rue Pierre et Marie Curie, 75231 Paris Cedex05, France, (c)LGEP-Cnrs, Supelec, Plateau du Moulon, 91192 Gif sur Yvette, France

P-VIII.3 16:45 ATOMIC DIFFUSION AT Cu(In,Ga)(S,Se)₂/ZnSe INTERFACES STUDIED BY HI-ERDA, S. Lindner, W. Bohne, A. Jäger-Waldau, M. Lux-Steiner, J. Röhrich, G. Vogl, Hahn-Meitner-Institut, Dpt. SE2/SF4, Glienicke Str. 100, 14109 Berlin, Germany

P-VIII.4 17:00 Invited CHARGE CARRIER SEPARATION VS. EXCITON DIFFUSION CONTROL OF MOLECULAR ORGANIC SOLAR CELLS, **D. Meissner**, LIOS, Linz University, Altenbergerstr.69, 4040 Linz, Austria, and J. Rostalski, IEV, Forschungszentrum Jülich, 52425 Jülich, Germany

P-VIII.5 17:30 ORGANIC CO-EVAPORATED FILMS OF A PPV-PENTAMER AND C60: MODEL SYSTEMS FOR DONOR/ACCEPTOR POLYMER BLENDS, W. Geens, T. Aernouts, J. Poortmans, IMEC vzw, Kapeldreef 75, 3001 Leuven, Belgium, G. Hadziioannou, Department of Polymer Chemistry and Materials Science Centre, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands

P-VIII.6 17:45 INVESTIGATION OF HIGHLY ORDERED PARA-SEXIPHENYL STRUCTURES BY ATOMIC FORCE MICROSCOPY, A. Andreev, C.J. Brabec, N.S. Sariciftci, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, University Linz, 4040 Linz, Austria; P. Hinterdorfer, Institute of Biophysics, University Linz, 4040 Linz, Austria; H. Sitter, G. Springholz, Institute for Semiconductor and Solid State Physics, University Linz, 4040 Linz, Austria; H. Plank, R. Resel, Institute of Solid State Physics, Graz University of Technology, Austria

P-VIII.7 18:00 CONTACTLESS CHARACTERIZATION OF a-Si:H FILMS ON CRYSTALLINE SILICON SUBSTRATES, S. von Aichberger, F. Wünsch and M. Kunst, HMI, Glienickestr.100, 14109 Berlin, Germany

P-VIII.8 18:15 SPATIALLY RESOLVED PHOTOLUMINESCENCE IN CuGaInSe₂ FILMS AND DEVICES, T. Unold, K. Bothe, G.H. Bauer, FB Physics, Carl von Ossietzky University Oldenburg, Germany

Friday, June 8, 2001
Vendredi 8 juin 2001

Morning
Matin

Session IX: Solar Cells I
Session Chair: A. Jäger-Waldau, HMI, Berlin, Germany

- P-IX.1** 8:30 Invited PRODUCTION TECHNOLOGY FOR CIGS THIN FILM SOLAR CELLS, **T. Negami**, Matsushita Electric Ind. Co., Ltd., 3-4 Hikaridai, Seika, Soraku, Kyoto 619-0237, Japan
- P-IX.2** 9:00 OPTIMIZATION OF CdS LAYERS IN HIGH EFFICIENCY Cu(In,Ga)Se₂ BASED SOLAR CELLS, **M.A. Contreras**, K. Ramanathan and F. Hasoon, National Renewable Energy Laboratory, 1617 Cole Blvd., Golden CO 80401, USA
- P-IX.3** 9:15 DIFFUSION OF GALLIUM IN Cu(In,Ga)Se₂/ZnO SUPERSTRATE SOLAR CELLS AND ITS IMPACT ON THE PHOTOVOLTAIC PROPERTIES, **M. Terheggen**, H. Heinrich, G. Kostorz, ETH Zurich, Institute of Applied Physics, 8093 Zurich, Switzerland, F.-J. Haug, H. Zogg, A.N. Tiwari, ETH Zurich, Thin Film Physics Group, Lab of Solid State Physics, Technopark ETH-Building, Technoparkstr. 1, 8005 Zurich, Switzerland
- P-IX.4** 9:45 SPUTTERED Sb₂Te₃/Mo AND Sb₂Te₃/Ni LAYERS AS BACK CONTACTS FOR CDS/CDTE SOLAR CELLS, **A. Abken**, O. Bartelt, M. Köntges, Institut für Solarenergieforschung GmbH, Sokelantstrasse 5, 30165 Hannover, Germany
- P-IX.5** 10:00 ACCURATE CHARACTERIZATION OF CONJUGATED POLYMER/ FULLERENE SOLAR CELLS, **J.M. Kroon**, M.M. Wienk, W.J. Verhees, ECN Solar Energy, P.O. Box 1, 1755 ZG Petten, The Netherlands and J.C. Hummelen, Strating Institute & Materials Science Center, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands
- 10:15 **BREAK**

Session X: Solar Cells II
Session Chair: D. Meissner, LIOS, Linz, Austria

- P-X.1** 10:30 Invited THIN-FILM POLYSILICON SOLAR CELLS ON FOREIGN SUBSTRATES USING DIRECT THERMAL CVD: MATERIAL AND SOLAR CELL DESIGN, **G. Beaucarne** and J. Poortmans, IMEC vzw, Kapeldreef 75, 3001 Leuven, Belgium and A. Slaoui, CNRS-PHASE, 23 rue du Loess, 67037 Strasbourg, France
- P-X.2** 11:00 INFLUENCE OF INTERFACE TREATMENTS ON THE PERFORMANCE OF SILICON-HETEROJUNCTION SOLAR CELLS, **J. Carabe** and J.J. Gandia, CIEMAT, Avda. Complutense 22, 28040 Madrid, Spain
- P-X.3** 11:15 Invited SOLAR CELLS BASED ON SENSITIZED SOLID STATE MESOPOROUS HETEROJUNCTIONS, **M. Graetzel**, Swiss Federal Institute of Technology, 1015 Lausanne, Switzerland
- P-X.4** 11:45 ELECTRICAL CHARACTERISATION OF DYE-SENSITIZED NANO-CRYSTALLINE TITANIUM DIOXIDE SOLAR CELLS, **G. Kron**, T. Egerter, J. H. Werner, U. Rau, Institut fuer Physikalische Elektronik, Universitaet Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany
- P-X.5** 12:00 A COMPARISON BETWEEN STATE-OF-THE-ART ‘GILCH’ AND ‘SULPHINYL’ SYNTHESISED MDMO-PPV/C₆₀ BULK HETERO-JUNCTION SOLAR CELLS, **T. Munters**(a), C. Brabec(b), T. Martens(a), L. Goris(a), V. Vrindts(a), J. Manca(a), L. Lutsen(a), W. De Ceuninck(a), N. Sariciftci(b), D. Vanderzande(a), L. De Schepper(a), J. Gelan(a). (a)Instituut voor Materiaal Onderzoek (IMO), Limburgs Universitair Centrum (LUC), Wetenschapspark 1, 3590 Diepenbeek, Belgium. (b)Christian Doppler Laboratory for Solar Cells, Johannes Kepler University, 4040 Linz, Austria
- P-X.6** 12:15 DEVICE OPERATION OF CONJUGATED POLYMER/FULLERENE BULK HETERO-JUNCTION SOLAR CELLS, **G. Matt**(a), T. Munters(c), T. Fromherz(b), D. Vanderzande(c), J.C. Hummelen(d), N.S. Sariciftci(a) and C.J. Brabec(a), (a)Christian Doppler Laboratory for Solar Cells, Johannes Kepler University, 4040 Linz, Austria, (b)Institute for Semiconductor and Solid State Physics, Johannes Kepler University, 4040 Linz, Austria, (c)Instituut voor Materiaal Onderzoek (IMO), Limburgs Universitair Centrum (LUC), Wetenschapspark 1, 3590 Diepenbeek, Belgium, (d)Stratingh Institute and MSC, University of Groningen, 9747 AG Groningen, The Netherlands
- 12:30 **LUNCH**