

R. Kozlowski, G. E. Zaikov*, M. I. Artsis*

Institute of Natural Fibres, ul. Wojska Polskiego 71B, Poznan 60-630, Poland
whc@inf.poznan.pl

*N.M.Emanuel Institute of Biochemical Physics, Russian Academy of Sciences,
4 Kosygin str., 119334 Moscow, Russia
chembio@sky.chph.ras.ru

XIII INTERNATIONAL CONFERENCE FOR RENEWABLE RESOURCES AND PLANT BIOTECHNOLOGY (NAROSSA^R)

XIII International Conference for Renewable Resources and Plant Biotechnology (NAROSSA^R) was held at the Institute of Natural Fibres (INF) (Poznan, Poland) in the period of June 18-19, 2007. The organizers of the conference were OHMI Consulting GmbH (Magdeburg, Germany), INF and Bio-Mitteldeutschland GmbH (Halle-Saale, Germany). The conference was sponsored by OHMI Analytik. Dr. Melvyn F. Askew (Central Science Laboratory, York, UK), Prof. Atanas Atanasov (AgroBioInstitute, Sofia, Bulgaria), Dr. Peter Bloss (Kunststoff-Zentrum in Leipzig GmbH, Germany), Dr. Dieter Bockey (UFOP e.V., Berlin, Germany), Dr. Susanne Brandt (Londesbauernverband Sachsen-Anhalt e.V., Magdeburg, Germany), Dr. Torsten Graft (Thüringer Landesanstalt für Landwirtschaft, Dornburg, Germany), Dr. Jens A. Katzek (BIO Mitteldeutschland GmbH, Halle, Germany), Prof. Lyubov V. Khotyleva (Institute of Genetics and Cytology, Minsk, Belarus), Prof. Paul P. Kolodziejczyk (Olds College School of Innovation, Olds, Alberta, Canada), Dr. Katalin Kovari (Bunge Europe Research and Development Center, Budapest, Hungary), Prof. Ryszard Kozlowski (Institute of Natural Fibres, Poznan, Poland), Prof. Horst-Herbert Krause (Narossa e.V., Magdeburg, Germany), Dr. Lothar Lucke (BioPro, Magdeburg, Germany), Dr. Lotar Morl (Otto-von-Guericke-Universität, Magdeburg, Germany), Dr. Marijana Perifanova (Higerher Institute of Food and Favour Industries, Plovdiv, Bulgaria), Dr. Isaak Rashal (University of Latvia, Salaspis, Latvia), Prof. Ingo Schellenberg (Hochschule Anhalt, Bernburg, Germany), Dr. Heike Schimpf (Landesanstalt für Landwirtschaft, Forsten und Gartenbau, Bernburg, Germany), Prof. Grete Bach (IfN Institut für Neuwerwirtschaft GmbH, Troglitz, Germany), Dr. Ralph Thomann (Institut für Getreideverarbeitung GmbH, Berholz-Rehbrücke, Germany), Dr. Ute Bauermeister (Forderungsgemeinschaft Ökologische Stoffverwertung e.V., Halle-Saale, Germany), Dr. Matthias Gohla (Frounhofer IFF Institut für Fabrikbetrieb und – automatisierung, Magdeburg, Germany), Prof. Anti Viikna

(Tallinn Technical University, Department of Polymer Materials, Tallinn, Estonia), Prof. Gennady E. Zaikov (N.M.Emanuel Institute of Biochemical Physics, Moscow, Russia)

The conference included the following topics:

- biotechnology and breeding for non-food applications;
- fibrous plants for textiles and composites – renewable raw materials, production and processing;
- processing, characterization and application of secondary plant substances;
- biodiesel and bioalcohols – alternative feedstock, material and energetic use of by-products, improved production processes;
- environmental and economical impact.

Two co-chairmen of the conference (Prof. R. Kozlowski, director of INF and Dr. Frank Pudel, director of OHMI) took part in the opening ceremony. Representatives of Ministry of Agriculture and Rural Development of Poland and Ministry of Agriculture and Environment of Saxony-Anhalt, Germany, greeted the participants of the conference.

The scientific program of the conference included 3 plenary lectures, 19 lectures and 20 posters.

The plenary session included 3 plenary lectures (D. Laszkevich, Poland and G. E. Zaikov, Russia – cochairmen).

The first plenary lecture was devoted to plant biotechnology in Germany (current issues) (Jens A. Katzek, Bio Mitteldeutschland GmbH, Halle-Saale, Germany). Prof. Ryszard Kozlowski (with Maria Wladyka-Przybylak) gave information about natural fibres as reinforcing materials for composites. In the third plenary lecture Prof. Gennady Zaikov reported about bio-damages in materials.

Four lectures have been included in the session “Biotechnology and Plant Breeding” (Prof. Ryszard Slamski (Poland) and Dr. Jens A. Katzek –cochairmen). Some peculiarities of the in vitro pre-breeding work on resistance to *Colletotrichum lini* on flax have been discussed in the

lecture of I. Uuschapovsky, N. Petrova and Chung Mai Duc (Flax Research & Technological Institute, Tver, Russia). Information about the analysis of callus formation capability in anther culture of *Linola* crossed with other linseed cultivars have been presented in the lecture of K. Wielgus and G. Mankowska (INF, Poland). V. Utesch (KWS Polska Sp. Z.o.o., Poznan, Poland) spoke about requirements of maize as input for production of biogas. Half-seed method efficacy for breeding of linseed cultivars with different level of C-18 polyunsaturated fatty acids was presented in the lecture of M. Praczyk, M. Biskupski, G. Silska (INF) and A. Sapieja, A. Patejuk-Duba, B. Binkowska (INF, Dept. in Zyrandow, Poland) gave presentation about tencel standard and tencel A 100-Similarities and differences.

The title of the second session was “Fibrous plants and applications”. Dr. K. Wielgus (Poland) and Prof. I. Schellenberg (Germany) were co-chairmen. Four lectures were included in this session. The report of J. Marek, V. Antonov (INOTEX, spol. S.r.o., Dvur Kralove n.L., Czech Republic and H. Fisher (Faserinstitut Bremen e.V., Germany) dealt with biomodification of hemp and flax fibres. Application of bio-technology in pre-treatment of cotton textiles to enhance quality has been discussed in the lecture of S. Laga, A. Wasif (Textile & Engg. Institute, Ichalkaranji, India). The last two lectures of this session were devoted to the use of ultrasound waves in textile wet-processing (Y. Indi, A. Wasif, the same institute from India) and nonconventional technology of processing textile waste (E. Carpus, E. Visilenou, R. Scarlat (The R&D National Institute of Textile and Leather, Romania).

There were six lectures in the third session with the title “Secondary plant substances” (Prof. H. Burczyk, Poland and Prof. I. Schelenberg, Germany – co-chairmen).

K. Kabrodt, I. Schelenberg (Anhalt University of Applied Sciences, Center of Life Sciences, Institute of Bioanalytical Sciences (IBAS), Bernburg, Germany) presented information about functional and analytical characterization of Rhubarb fractions for producing cosmetical and pharmaceutical products. Group of authors (H. Haida, V. Mteva, M. Borner, W. Behns, M. Kostova, S. Heinrich, L. Morl, Otto-von-Guericke-University, Magdeburg, Institute of Process Equipment and Environmental Technology, Magdeburg, Germany and University of Chemical Technology and Metallurgy, Sofia, Bulgaria) gave the review about removal of solvents from plant materials. Extraction and purification of inulin form tubers of Jerusalem artichoke cultivated on the Canadian Prairies has been discussed in the lecture presented by P. Kolodziejczyk and J. Slaski from Olds College School of Innovation, Canada and Alberta Research Council, Canada. The last four lectures of this session were devoted to PORT AFERM – a mobil hydrolysis unit for anaerobic

digestion plants (T. Pietschmann, A. Klauss-Vorreiter, M. Kauss, Portaferm/Bio VAG Weimar, Germany), bead cellulose as a substrate for enzyme immobilization (C. Fanter, Fraunhofer Institut fur Angewandte Polymerforschung, Potsdam-Golm, Germany), preparation and application of functional polymers as eco-friendly dye fixing agents (A. Wasif, S. Laga, N. Bhattad, Textile & Engg. Institute, Rajwada, Ichalkaranji, India) and properties and application of rapeseed proteins (J. Kroll, J-P. Krause, University of Potsdam, Germany, Pilot Pflanzenoitechnologie Magdeburg e.V., Germany).

The fourth session had the title “Bionergy” and included seven lectures. Cochairmen of this session were Prof. R. Kozłowski, Frank Pudel and Paul Kolodziejczyk.

The following topics have been discussed in this session: new process for maximum reduction of gluconisolate in rapeseed extraction meal without damage of proteins (G. Borner, W. Paul, G. Fleck, OHMI Engineering GmbH, Magdeburg, Germany, Pilot Pflanzenoitechnologie Magdeburg e.V., Germany), energy potential of crop residues in Nigeria (S. O. Jekayinfa, Nigeria; V. Scholtz, Leibniz-Institute for Agricultural Engineering, Potsdam, Germany), the energetic use of *Jatropha* – a study of the properties during processing (J. Rietzler, H.-G. Brandt, Fachhoshschule Ansbach, Germany, Pilot Pflanzenoitechnologie, Magdeburg, Germany), comparison of energy efficiency of some plants species in different environmental and agricultural conditions (J. Pudelko, W. Skrzypczak, Agrar Akademie, Poznan, Poland), the possibility of using of biomethane instead of biogas (L. Dinkloh, Schmack Biogas AG, Schwandorf, Germany), the use of hydrolytic enzymes in agricultural biogas production (results from practical applications) (M. Gerhardt, V. Pelenc, M. Bauml, Biopract GmbH, Berlin, Germany, Cowatec GmbH, Burglengenfeld, Germany) and industrial hemp as a raw material for energy production (L. Grabowska, H. Burczyk, M. Strybe, P. Baraniecki, INF).

The Poster session included many interesting topics (S. Koch, Germany and M. Mackiewicz-Talarczyk, Poland, were in chair of this session). We would like to focus on the following topics:

- effect of medium composition and explant source on plant regeneration;
- the nature as an inspiration for art;
- the magic of red and purple in natural colours;
- hemp and linseed flax value enhancement with enzymes;
- antifungal protection of natural fibres;
- evaluation of field performance of Jerusalem artichoke (*Helianthus tuberosus* L.) as an alternative, multipurpose crop for Alberta, Canada;
- the use of alternative grass plants as a source of energy;

XIII international conference for renewable resources and plant biotechnology...

- the comparison of Romanian varieties of mulberry silkworm (*Bombyx mori* L.) bred in Polish and Romanian Conditions;
 - environmental degradation of Ramie fibre reinforced biocomposites;
 - aseptic controlled release from polymer films. Combination of diffusion and zero-order kinetics;
 - transport of water as structurally sensitive process characterizing morphology of biodegradable polymer systems;
 - kinetics for the chemistry, biology, medicine and agriculture;
 - spatial-energy principles of complex structures formation in biotechnology;
 - the analysis of expression of chalcone synthase encoding genes in yellow lupin;
 - processing of wet preserved hemp to different materials;
 - application of biological elicitors in protecting flax against Fusarium Wilt and their effect on fibre and seed yields.
- The next XIV Conference "NAROSSA^R" will be held in 2008 in Magdeburg (Germany).

