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### **3<sup>rd</sup> INTERNATIONAL SCIENTIFIC CONFERENCE “WOODWORKING TECHNIQUE” IN ZALESINA (CROATIA)**

*On September 2–5 took place 3<sup>rd</sup> Scientific Conference “Woodworking Technique” in Zalesina (Croatia). The organizer of the conference was Department for Process Techniques of Zagreb University in cooperation with Department of Wood Processing of Czech University of Agriculture in Prague. The leading subject of the conference was widely treated wood processing. Presentations of papers took place in two sections: section one – “Woodworking technique” and section two – “Woodworking processes”.*

*In the conference participated representatives of the universities and research centres from 6 countries from Central Europe. Poland was represented by Technical University of Poznan, Poznan University of Life Sciences and Wood Technology Institute in Poznan. Altogether 37 papers were presented in that number 4 from Poland.*

**Keywords:** woodworking, tools, dust, production processes, conference

On September 2–5 2009, took place 3<sup>rd</sup> Scientific Conference “Woodworking Technique” (in training centre of Zagreb University) not far from Rijeka. The organizer of this conference was Department for Process Techniques of Zagreb University in cooperation with Department of Wood Processing of Czech University of Agriculture in Prague. The leading subject of the conference was widely treated wood processing. Presentations of papers took place in two sections: section one – “Woodworking technique” and section two – “Woodworking processes”.

In the conference participated representatives of the universities and research centres from 6 countries from Central Europe: Bulgaria – University of Forestry in Sofia, Czech Republic – Czech University of Life Sciences in Prague, Mendel University of Agriculture and Forestry in Brno, Croatia – University of Zagreb,

Hungary – University of West Hungary in Sopron, Slovakia – Technical University in Zvolen, Matej Bel University in Banska Bystrica, and Poland. Poland was represented by Technical University of Poznan, Poznan University of Life Sciences and Wood Technology Institute in Poznan. Altogether 36 papers were presented in that number 4 from Poland.

In separate sections the following papers were presented:

Section 1 Woodworking technique: 30 papers from which the most interesting were those describing issues connected with:

- Investigation of dynamic conditions of fix- and industrial vacuum clamping of machined elements on CNC at differentiated machining speed from 3000 up to 120 000 rpm at four different cutting depths and constant feeding rate,
- Machining of homogenous beech wood with abrassive water jet and created kerf in cut material. Special analysis was devoted to surface quality after cutting as well as the shape of kerf obtained at top and bottom kerf. The invetigation was held at different feed rate and different directions in relation to fibres,
- Creation of mathematical models of machine operations, management optimisation in technological processes. The new optimisation method proposal is based on technical and economic characteristics of production elements, material flow physical characteristics, production system economic characteristics, and physical and mechanical properties of surface trevelled by machines. Mathematical methods were confirmed by experimental measurement,
- Paper on sawmilling in the Czech Republic since 1989. The description of new enterprises triggered a revolution in sawmill diversification. Small sawmills, on the contrary, started to be attractive because they seemed to have been competitive and had potential,
- Analysis of occupational disease in the wood processing industry in the period 2000–2009. Analysis, synthesis, and comparison methods were used for data processing and evaluating of results. Development of occupational diseases frequency demonstrated an increasing trend in the last year,
- Description of PIC method of risks assessment of five point scale of three basic parameters – (P) for probability of undesired events, (I) for negative impact or result of an event, and (C) as an impact of the management system of safety and health at work on the consequences,
- Safety and health protection at work as regards using woodworking machines: band saw, frame saws, and circular saw. The characteristics of basic rules, which must be implemented regarding tool, machine and operator to eliminate risk,
- The automated installation for conditioning of dried sawn materials. The analsis of technical, technological and economic reults,

- Investigation of the influence of local reinforcement of contact zones co-operating surfaces of PUR 555.6 nano connection. Test of pin pulling out at different loading speeds,
- Frozen wood computation and 3D visualisation of the temperature distribution in frozen and non-frozen logs during their thermal treatment of the finite-difference method,
- Monitoring of the effect of selected factors on cutting input power in sawing frozen and non-frozen beech wood on a horizontal band saw,
- Methodology for the kinematic and force calculations concerning the elements of the device for vertical shifting of the circular saw as a part of the device for longitudinal sawing of horizontal band saw,
- Research in the field of high-speed milling of wood – a new approach to evaluate the quality of machined wood surface by means of contactless scanning of wood surface by thopografic method,
- Questions of dust creation as a result of machining:
  - Results of granulometric analysis using the granularity of sawdust described by shares and shapes of fractions. Suitable for the production of sintered materials and homogenized fuel in the form of briquettes and pallets,
  - Granular analysis of dust particles obtained from profiling and sanding processes of medium density fibre boards on four-side moulders,
  - Dustiness at cutting of agglomerated materials,
  - New design and new tool constructions facilitating extraction of chips produced during machining,
- Producing and investigating elements of finger jointed glued laminated locust timber,
- Analysis of behaviour of tensions in wood during embossing,
- Knots and their influence on the quality of wood in the bending method of grading,
- Investigation of cutting process of poplar and pine logs with wide band saw blades with part-set and swage set teeth,
- Proper utilisation of tools and units for CNC machining centres,
- Compressed air consumption by the band saw equipped with strain guides,
- Machining properties of thermally modified beech wood in comparison with steamed beech wood,
- Influence of the method of milling on the geometry of fibrous chips and bending strength of produced particleboards,
- Technical efficiency of Czech’s sawmill enterprises based on cross sectional data,
- Vibration analysis for wood processing machine failure detection and prediction.

Section 2 Woodworking processes: papers presented in this section concerned the following areas:

- Modelling and optimisation of timber logging and transport technologies regarding ecological criteria,
- Analysis of some basic technical parameters of wood chippers,
- Occupational diseases in the wood processing,
- Definition of individual parameters for forest cutter, which can be used for increasing accuracy of constructional calculations for working tool.

Problems presented during the conference were questions connected with new methods of wood machining, new tools' construction, and usage of high speeds of machining, surface quality after machining, water cutting, the cause of formation and analysis of dust of machined materials, safety of work and risk connected with wood machining. There were also papers on modeling and simulation of production processes and the influence of world recession on wood industry. Of major interest was the presentation of results of renovation process in Penkov saw mill with water wheel being technical monument in the Czech Republic.

### **3. MIĘDZYNARODOWA KONFERENCJA NAUKOWA „TECHNIKA OBRÓBKİ DREWNA” W ZALESINIE (CHORWACJA)**

#### **Streszczenie**

W dniach 2–5 września 2009 roku odbyła się w Zalesinie (Chorwacja) 3. Międzynarodowa Konferencja Naukowa „*Woodworking technique*”. Organizatorem konferencji była Katedra Technik Wytwarzania (*Department for Process Techniques*) Uniwersytetu w Zagrzebiu razem z Katedrą Obróbki Drewna (*Department of Wood Processing*) Czeskiego Uniwersytetu Rolniczego w Pradze. Wiodącym tematem konferencji była szeroko pojęta obróbka drewna. Obrady odbywały się w dwóch sekcjach: pierwszej – poświęconej technice obróbki drewna i drugiej – dotyczącej procesów obróbczych. W konferencji uczestniczyli przedstawiciele uniwersytetów i instytutów naukowych 6 krajów Europy Środkowej, w tym z Polski (z ITD, Politechniki Poznańskiej i Uniwersytetu Przyrodniczego w Poznaniu). Ogółem zaprezentowano 37 referatów, w tym 4 z Polski.

**Słowa kluczowe:** obróbka drewna, narzędzia, zapylenie, proces produkcyjny, konferencja