



Participating organization

**LATVIAN STATE INSTITUTE
OF WOOD CHEMISTRY**

(LS IWCh)

RIGA, LATVIA

koks@edi.lv

Common information

Services/Products: Scientific research – 26 subjects
(wood and paper)

Total number of employees: 116

Members with science degree 36

Employees in E48 related areas: 1

Ownership structure: state owned

E48 representative's presentation (I)

LUBOVA BELKOVA

Dr. chem.

Leading researcher

Latvian State Institute of Wood Chemistry, Riga

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■ Academic background

Chemists-engineer of polymer and plastics (TU, Riga)

Radiation chemistry of polymers (RA IChPh, Moscow)

PhD in chemistry and technology of wood, cellulose and paper (LS IWCh, Riga)

■ Areas of expertise

Microstructure and physical-chemical properties of wood, cellulose and paper

Pulping processes

Paper aging

■ Function in COST E48 – WG1

LATVIA 2003 : Paper and boards (in 1000 metric tons)

Population of Latvia 2,45 million; Annual paper consumption 60 kg per capita

Paper	Production	Imports	Export
Newsprint	0	13.9	0
Printing/Writing	0.3	50.0	1.3
Corrugating materials	5.3	21.1	2.0
Wrapping papers	2.2	10.0	2.0
Σ	$\Sigma_1 = 7.8$	$\Sigma_2 = 95.0$	$\Sigma_3 = 5.3$
Sum total of paper	$\Sigma_1 + \Sigma_2 = 102.8$		
Consumption	$\Sigma_1 + \Sigma_2 - \Sigma_3 = 97.5$		
Total paper & board	38.1	143.2	35.4
Recovered paper	50.0	0.5	35.8
Note: 2004 year - the increase of recovered paper use on 15 %			Germany Belarus Ukraine Denmark

The LS IWCh scientific-research works
in areas of recovered paper treatments
**Prof. U.Viesturs et al. – Enzymatic treatment
of newspaper and office waste paper**

- The culture filtrate of *T.viride* was used for enzymatic treatment of recycling newspaper (TMP) fibers – improving brightness and dewatering properties.
- Applications of enzymes - commercial cellulase-Celluclast 1,5 L; lipase –Resinase A2x, Novo Nordisk AS, Denmark) and the optimization of the flotation process (aeration) provided a good-quality deinked pulp from toner-printed office waste paper.
- The addition of appropriate surfactant (hydrocarbon oil) provides for high brightness and cleanliness of recycled pulp).
- The deinking process of office waste paper by means of the enzyme system had been carried out on a plant with good results.

Prof. A.Treimanis - Consultations and help in areas of recovered paper treatment.

Own expectations in E48

- Identification of potential technological limits of paper recycling
- Development of appropriate recovery systems for used paper & board products in Latvia
- Establishment of a European research network in paper recycling within a Paper Technology Platform (PTP)

Own contributions to E48

Latvian State Research Project

Microstructure and properties of the multiple recovered paper. The methods of its improvement.

Leaders: L.Belkova, A.Treimanis

01 July 2005 - 2008