



Participating organisation

Hungary



Name of Organisation

Paper Research Institute Ltd.

Full Address

Budapest, 1215 Duna utca 57.

PO Box 59. H-1751

[\[pri-secr@axelero.hu\]](mailto:pri-secr@axelero.hu)



Organisation's details



Paper Research Institute Ltd.

Services/Products:

Research and Development

Total number of employees:

24

Employees in E48 related areas:

8

Number of students:

-

Research focus:

- Recycling technology of recovered paper
- Surface treatment of packaging paper and board
- Process water management

Ownership structure:

Ltd. owned by 6 paper mills



E48 representative's presentation (1)

Hungary



Alex Hernádi professor h.c.C.Sci.

Hungary 1215. Budapest, Duna utca 57.
a.hernadi@axelero.hu



Academic background:

engineer-researcher (T.U. of St. Petersburg 1964)
PhD in technology of organic chemistry (T.U. of Budapest 1969)
CSci of chemistry (Academy of Sci. 1976)
Honorary professor (Budapest Technical College 1996)

Areas of expertise:

Cellulose chemistry
Paper manufacturing
Paper ageing and recycling

Function in COST E48:

Member of MC
Member of WG2



E48 representative's presentation (2)



István Lele R+D director

Hungary 1215. Budapest, Duna utca 57.
ilele@axelero.hu

Academic background:

B. Sc. Chemistry (Tech.Univ. Budapest, 1973)
M. Sc. Chemistry (Tech.Univ. Budapest, 1978)

Areas of expertise:

water management
fibre characterization
bleaching and environmental technologies



Function in COST E48:
Member of WG2



E48 representative's presentation (3)

Hungary



Piroska Károlyi managing director

Hungary 1215. Budapest, Duna utca 57.
pri-secr@axelero.hu

Academic background:

chemical engineer

(Byelorussian Tech. Univ., 1984)

economist (Institute of Foreign Trade, Budapest, 1994)



Areas of expertise:

paper recycling technology

pulp and paper manufacturing

Function in COST E48:

Member of MC

Member of WG3



E48 representative's presentation (4)

Hungary



Szilvia Biro researcher
Hungary 1215. Budapest, Duna utca 57.
szilvia.biro@papirkut.hu

Academic background:
chemical engineer
(Budapest Univ. of Techn. and Economics, 2004)



Areas of expertise:

polymer chemistry
paper testing

Function in COST E48:
Member of WG1



E48 representative's presentation (1)



Alex Hernádi

Most relevant publications in the field of E48 (max. 5) :

Improving the recycled fibre performance by means of α - amylase treatment.
Viterbo 2003, Italy

Correlation between initial wettability and sheetmaking properties of secondary fibres. Valencia 2003, Spain

Short time wetting and water take-up of secondary fibres reactivated with enzymes. Trondheim 2004, Norway

Influence of hydrolising enzymes on the performance of secondary fibres gained from waste paper. Baiona 2005, Spain



E48 representative's presentation (1)

Hungary



István Lele

Most relevant publications in the field of E48 (max. 5) :

Effect of anionic trash materials (ATM) solved out from waste paper on the papermaking process, COST E1, 1996, Madrid-Spain

COD monitoring in a packaging paper mill, EPPIC workshop, 2003, Iasi-Romania



E48 representative's presentation (1)



Piroska Karolyi

Most relevant publications in the field of E48 (max. 5) :

Application of deinking technologies in the Hungarian paper industry, 1996,
Budapest

Paper recycling at the doorstep of the XXI. Century, 2000, Budapest

Sustainable development in the Hungarian paper industry, 2002, Esztergom-
Hungary



Own expectations in E48



- **Determination of technical and economical limits of reuse of secondary fibres**
- **Evaluation of those limits in respect of the research needs**
- **Creations of the research platform in the field of paper recycling**
- **Development of new, more economic recovery systems for used paper and board products**
- **Generation of European projects to solve most urgent research needs**



Own contributions to E48



Finished or current projects in the area of E48:

- Project 1: Paper recyclability, 1995-1998
- Project 2 : COLLOIDS 1998-2001
- Project 3 : FIBREVIVAL 1999-2002

Projects submitted or planned during the duration of E48

- none

Specific tools (equipment/software) relevant for E48 objectives

- AOX – instrument for determination of organic halogens
- TOC - (total organic carbon measurement) analysis instrument
- PDA - penetration dynamics analyser
- UV, VIS, IR spectrophotometers



Brief description of own finished or ongoing research projects in the area



Project 1: Upgrading recycled fibres by appropriate treatment during stock preparation *FIBREVIVAL* (1999-2002)

- **Background:** *increased paper recycling, deteriorating fibre properties*
- **Objectives:** *to develop various solutions to restore a part of the mechanical properties of the recycled fibres and to understand the mechanism of the restoration*
- **Means:** *mechanical, chemical and enzymatic treatment of the pulp*
- **Results:**
 - increasing drainability of the short fraction by enzyme treatment*
 - developing mechanical properties of the long fraction by medium or high consistency refining*



Organisation of E48 events



My organisation has the personal and logistic facilities to organise major E48 events and would particularly be prepared to host



specific (seperate) MC or WG meetings



parallel or consecutive meetings of both MC and WGs



a workshop (up to 50 participants)



an international conference (more than 50 participants)



External contributions to E48

Hungary



I believe that the following external organisations or experts could make valuable contributions to E48 events:

| Name | Organisation | Expertise |
|------|--------------|--|
| | CEPI | EU Pulp and Paper Industry's view |
| | BASF | Chemical Supplier's Views |
| | METSO | Machinery Supplier's Views |
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Expectations and offers concerning STSMs **Hungary**



My organisation is prepared to host young academics from foreign organisations in the frame of STSMs. We could offer collaboration in

- Wettability measurement of secondary fibres
- Evaluation of secondary fibres in respect of their technological properties

My organisation is interested in sending young academics to foreign research organisations in the frame of STSMs.

We would particularly be interested in learning more about

- SEM technic, sample preparation and evaluation of microscopical pictures
- Raman spectroscopy for determination of more important properties of secondary fibres