



CORNET Partnering Event PTS-Proposal “Activating Ozone”

Research and consultancy for the paper industry

PTS was established in 1951 as a foundation based on civil law. The foundation is funded by three founders and their member companies:

- **VDP German Pulp and Paper Association**
- **HPV German Employers' Association of the Paper, Board and Plastics Converting Industry**
- **FPT Paper Technology Research Association**

A staff of 180 highly qualified specialists generates an annual turnover amounting to €20m at two locations in Munich and Heidenau.

PTS carries out product development, process optimisation and materials testing in its research laboratories and pilot plants using highly efficient analytical techniques.

Research for the paper industry and its suppliers

PTS research work focuses on non-profit collective research. In addition, research is also conducted as contract research for individual companies or as collaborative research where several companies join to form a project consortium.

PTS research centres on the following areas:

- **Pulps**
- **Stock preparation and wet end**
- **Surface technology**
- **Energy and water**

Attention is focused on optimising processes, developing innovative products and ensuring consistently high quality.

Non-profit collective research



- PTS know-how is based in particular on collective research whose planning and implementation is determined by industry's needs.
 - Collective research is sponsored by various funding programmes at the federal and Laender level as well as by industry.
 - All participating companies have access to the results of research.
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- The annual scope of research amounts to about 40 projects per annum involving a total of about 100 man-years and a funding volume of approx. € 6-7m.
 - It is especially small and medium sized enterprises that profit from collective research.

Experience in CORNET

PTS coordinator in:

PAPRIQUA (1.07.2008 – 30.06.2010) – CORNET call 3

www.cornet-papriqua.eu

SOTIPA (1.09.2009 – 30.08.2011) – CORNET call 5

www.cornet-sotipa.eu

ALBAQUA (1.09.2009 – 30.08.2011) – CORNET call 6

www.cornet-albaqua.eu

SONOPULP (1.01.2010 – 31.12.2011) – CORNET call 7

www.cornet-sonopulp.eu

PrintIP – submitted CORNET call 8

Objective

Making available new water sources for high water volume consuming industries like pulp and paper, leather, textiles and food by extensive in house water recycling and the use of municipal waste water instead of fresh water.

Key to this is the application of ozone water treatment, improved in efficiency of for advanced treatment of effluents.

To enable this, the ozone treatment has to be dramatically improved in efficiency to reduce the required ozone amount and thus the costs:

- Reducing the ozone demand (minimising input)
- and improving efficiency of the introduced ozone (maximising output)
- by
 - (The use of oxygen to generate ozone)
 - Promoting radical ozone reactions
 - Combining O_3 with H_2O_2 , UV, catalysts

Key innovation (partners needed!)

- Application of **AOP (O₃ + UV, O₃ + H₂O₂)** for effluent treatment in the pulp and paper industry and **other industry sectors**
- Application of **suitable catalysts**, which do not clog; practicable in large scale application

Further key questions:

- Does the treatment of effluents with AOP improve biodegradability? (to be found out)

Expected benefits

- A key technology made economically available to ensure extensive reuse of treated effluents
 - > Industrial processes consuming **less fresh water (savings > 30%)**
- Expected **reduction in ozone dosage by 20%**
- Significantly improved efficiency of the following biological treatment
 - > Reduced operating costs and thus less energy required

Further returns:

- Better understanding of on-going processes
- Individual concepts available for advanced effluent treatment (expanding water-treatment-consultancy by addition of treatment combinations)

Partners

- Companies (SME) providing AOP technology
- Companies (SME) providing catalyst technology
- Experts/Partner research institutes with know-how in municipal wastewater (performance of trials)
- Experts/Partner research institutes with know-how in performing trials for industries other than pulp and paper (**leather, textiles, food, pharmacy and others**) and SME Users in these sectors