



European Paper Recycling Awards 2015 Winner

Information and Education Category Szkoła Podstawowa nr 11 – Literatura za Makulaturę (Literature for Paper for Recycling)

Background

Szkoła Podstawowa nr 11 is a primary school of almost 400 pupils in the municipality of Tychy located in the Silesian province of Poland. The aim of the Literatura za Makulaturę project was to show children the importance of recycling and to increase the number of pupils involved in paper recycling.

In order to encourage children to get involved in paper recycling, the school invited famous Polish authors to meet the pupils. The authors' participation was paid with money raised from selling the Paper for Recycling brought to school by the children. The initiative is unique not only in Tychy but also in Poland. The project was launched in 2010 and a new edition is organised every year.

Objectives

- Show children that paper recycling is important, and encourage them to recycle used paper.
- Encourage children to bring more paper to school by organising appointments with famous Polish authors for the top 90 children on the Paper for Recycling-ranking list.
- Give children a personalised bookmark including the date of the event and the name, picture and autograph of the authors.
- Give each pupil who brings more than 100 kg of paper a collectible badge with the name of the project on it.
- 170 out of 300 pupils have taken part since the launch of the project.
- 15 to 22 tonnes of paper worth 2000 – 3000 PLN (around 700 euros) were collected in one year.

Stakeholders

- **Pupils and their parents** collected Paper for Recycling from all possible sources.
- **Wider community**, including teachers, workplaces and neighbours, helped with collecting used paper, increasing the scope of people involved in the project.
- **Teachers** encouraged and talked with children about recycling and its benefits.
- **Collective effort** allowed a minimum of one author per year to be invited to the school, providing children with badges and books for their recycling efforts.

More information at: <http://www.sp11.webity.pl/>





European Paper Recycling Awards 2015 Winner

Technology Improvement and R&D Category Aalto University – Textile fibers from paper and cardboard via the loncell-F process

Background

Researchers predict that global cotton production will soon be unable to cover the demand for cellulosic fibers. Man-made cellulosic fibers can fill this gap.

Taking advantage of the loncell-F technology, the joint efforts of Aalto University and the Technical Research Centre of Finland (VTT) developed a process to turn Paper for Recycling and cardboard into cellulosic textile fibers. Reusing material not only substantially reduces raw material costs but also the demand for new resources. The special technique allows for the production of textile fibers with high strength up to double the strength of regular viscose fibers.

The concept has been developed as a laboratory pilot suitable for the production of small prototype garments.

Objectives

- Produce textile fibers from low-grade Paper for Recycling material.
- Use Paper for Recycling material as feedstock for textile fibers as a means to reduce the ecological footprint from both ends.
- Use the ionic liquid-based loncell-F process to produce excellent mechanical properties suitable for textile applications and as reinforcements for composites.
- Expand the project scale and focus area into two follow-up projects.

Stakeholders

- **Aalto University** used a novel spinning technique to spin continuous filaments from Paper for Recycling and board. The exhibited garments were also produced at Aalto University, Department of Design.
- **VTT** comprised the acquisition and pre-treatment for the Paper for Recycling material

More information at: <http://puu.aalto.fi/en/>, <http://www.vttresearch.com/>



European Paper Recycling Awards 2015 - Commended Information and Education Category

1) The Modulated Eco-Contribution Scale, an innovative tool to promote recycling

Ecofolio is a non-profit organisation that manages the end-of-life-processes of graphic paper products on behalf of the French government. Ecofolio organises the collection of eco-contributions from graphic paper editors and redistributes the funds to local authorities in charge of collecting, sorting, transporting and recycling Paper for Recycling. Ecofolio aims to develop paper recycling in France by up to 55% in 2016 and 60% in 2018 (47% in 2012).



Tous les papiers
ont droit à plusieurs vies.

Ecofolio has introduced the Modulated Eco-Contribution Scale, an innovative tool to adjust paper-related eco-contributions paid by paper products editors. It mainly consists on decreasing the eco-contribution by 10 % (bonus) for paper products made from recycled fibres and increasing the eco-contribution by 5 % (malus) for the presence of each disruptive elements for recycling on the paper product or for paper made from fibres which have not come from sustainably managed forests.

The Modulated Eco-Contribution Scale is the first tool in the world that encourages eco-design for graphic paper products by combining education and financial incentive already applied on about 1.6 million tons of graphic paper each year in France. Not only is it a way of disseminating knowledge and recommendations about eco-design, but thanks to its financial incentive, it also motivates paper products manufacturers and printed-media contractors to adopt best practices. As an operational tool it gets all stakeholders involved and can be used to encourage the use of recycled fibres, bringing product recyclability to the forefront without actually prohibiting poor practices or being punitive.

More information at: <http://www.ecofolio.fr/>

2) Education project Papier & Karton

The Education project Papier & Karton is a digital school programme developed by Papierenkarton.nl and Klasse TV. The programme aims to stimulate recycling, creativity and awareness of the sustainable features of paper and board amongst children of 10 to 12 years of age and to involve children in re-use and recycling of paper and board.



By 2017, about 70.000 children will have followed the programme which is free of charge. Moreover, 2,500 teachers will receive information about sustainable paper several times a year. Special events and projects are organised around national holidays. For this year's Mother's Day, for example, teachers were invited to follow the education programme by organising a special "creative Mother's Day afternoon" in the classroom. This involved making a bag for mothers made out of used paper and board. The best bags were awarded a prize.

Besides the education programme itself, a game application with questions about paper has been launched. After following the programme children will know the answers and can play a paper game against each other and their parents. In the project all the paper chain partners are involved as stakeholders from manufacturer to publisher as well as recycling companies.

More information at: <http://klassetv.nl/lespakket/papier-karton/> and www.papierenkarton.nl



European Paper Recycling Awards 2015 – Commended Technology Improvement and R&D Category

1) Polycup recycling at James Cropper speciality papers

This project aims to recycle polycups and insert recycled pulp in high-quality luxury board replacing virgin pulp. Before the project was launched, no other installation was capable of recycling polycups while ensuring a very high final pulp quality.

The stakeholders of the project include the customer technology team from James Cropper and the technology team from Kadant.



The milestones of the project are:

- Use new raw materials that have never been used before
- Fulfill high-quality requirements for recycled pulp and final product to be able to replace virgin pulp and to be inserted in high quality luxury boards done before with 100% virgin pulp
- Develop a specific method to value final quality and small plastic residues, as conventional standard methods are not suitable



The project will have value for final customers everywhere where there are pre- or post-consumer polycups as a sorted raw material.

More information at: <http://www.kadant.com/en/> and <http://www.jamescropper.com/>

2) REFILLS: Recovering of Energy and FILLers from Sludge

The project “Recycling of Energy and FILLers from Sludge” aims to provide a sustainable solution for the paper industry’s biggest waste flow: deinking and paper sludge. Project REFILLS was launched by Alucha, a technology company that specialises in advanced recycling solutions for difficult waste streams. In 2014, SCA, a leading global hygiene and forest products company, joined the project.



The milestones of the project are:

- Enable the paper industry to turn the deinking sludge into fossil-free pyrolysis fuels and re-usable minerals while avoiding sludge transport nuisance.
- The 10kg/h pilot system efficiently converts the organic components of the sludge into high quality fuels while separating re-usable minerals.
- The innovative pyrolysis reactor can be used for many other waste streams.
- The first industrially-sized unit should be operational in 2017 allowing a paper mill to recycle its sludge locally to produce non-fossil fuels and valuable minerals.
- The commercial solution provides lower carbon footprint, lower nuisance and helps the (European) economy become more circular.



Once the novel recycling solution becomes operational on an industrial scale, the objective is to roll it out around the world.

More information at: <http://www.sca.com/> and <http://www.alucha.com/>

3) Advanced treatment of recycled pulp by use of hydrodynamic cavitation pulses

The goal of the project was to replace current energy-intensive processes in preparing pulp for papermaking by a new technology: hydrodynamic cavitation. The use of hydrodynamic cavitation improves and facilitates the process of preparing pulp out of Paper for Recycling. Thanks to this new technique, the resulting paper has enhanced optical and strength properties while deinking, because removing printing ink from fibers of recycled paper to make deinked pulp, is more efficient, and the fibre surface is activated for higher bonding strength of the fibres.



The cavitation effects are created by pumping the stock suspension through a partially reduced pipe diameter (nozzle or throat). The project was initiated after realising that technologies currently used have achieved their limitations in the efficient preparation of high quality pulp.

This is particularly important because of the increasing number of hard-to-deink printed papers. Currently, up to ten steps in the pulp stock preparation are needed to achieve an acceptable quality for the production of graphical or packaging papers.

Hydrodynamic cavitation technologies show a very high potential to overcome the limitations in the quality of the final product while consuming much less energy. The only thing you need is an efficient pump and a throat with the right geometry.

More information at: <http://www.ptspaper.com/>