Subject:
Process solutions for an optimum fibre recovery from deinking plant circuit waters and rejects.

Background/Problem area
The state of the art for graphic product recycling has dramatically changed during the last decade. The deinking technology has become increasingly complex and now includes a lot of different steps. Accordingly, operating costs and reject volumes are undergoing a drastic increase.

Increasing amounts of contraries contained in recovered papers and the ever more stringent quality requirements on recycled fibres necessitate more extensive cleaning operations. As a result, the residue arisings from recovered paper treatment continue to grow. The relatively high quantities of residues present in deinking plant effluents and sludges force recycling mills to increase their spending on utilisation of wastes or disposal processes. Higher utilisation rates of recovered papers in papermaking contribute to this development. To maintain their competitiveness, recycling mills need adequate and cost-efficient processes enabling an optimum fibre recovery from deinking plant sludges and effluents.

Objectives/Research results
Against the background of increasing residue volumes from recovered paper treatment, the project aims at increasing the efficiency of recovered paper treatment plants (deinking plants) and reducing the waste arisings and the resulting disposal/recycling costs and costs for recovered paper.

Accordingly, the quantities of fibres contained in the circuit waters and reject flows of deinking plants will be determined and the paper-technological characteristics of the fibres present in the individual circuit waters and reject flows will be evaluated.

Application/ Economic benefits
The project findings will be the basis for recommendations and guidelines for papermakers to reduce fibre losses by enhanced product quality. Increasing yield in deinking plants by optimum fibre recovery from deinking plant circuit waters and sludges means that consumed recovered paper could be used far more effectively for the production of high-quality deinked pulp. This will enable a reduction of costs for recovered paper and landfiling / disposal of waste. Decreasing the amount of solids entering the circuit water treatment processes applying dissolved air flotation (DAF) will reduce chemical dosages, as well as a reduction in chemical costs. The efficiency of circuit water treatment will increase by removing fibres contained in the inflow to DAF because of a higher selectivity. The benefits to be derived are an improved quality of the process water (less impurities), improved runnability of paper machines and decreased fresh water consumption and specific waste water volumes. The benefits to the deinking industry are cost savings.

Project period: 01.02.2005 – 31.01.2006

Remarks
The research project AiF 14142 is being sponsored by the German Federal Ministry of Economics and Labour.
Are you interested? Then send us this short description with your name and address via fax. The project manager will contact you afterwards.

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