AGROTECHNOLOGY & FOOD SCIENCES GROUP
WAGENINGEN UR

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Research News

Paper and Board Research

Wageningen UR Paper and Board conducts fundamental and applied research to develop new sustainable processes and products in the paper and board area. Our expertise enables us to contribute towards improved process efficiency by more effective use of fibre raw materials, introduction of new chemicals, control of stock preparation and product quality and by reduction of energy and waste formation.

Fibre Raw Materials

At Wageningen UR the research on fibre raw materials is focussed on the quality and choice of fibre raw materials source related to processing and end product requirements. This includes research on the potential and processing behaviour of different virgin wood fibre blends, research on the constituents and quality of recycled fibres, as well as research for non-wood fibres to blend with wood fibre mixtures to upgrade specific processing or end product properties.

Fibre Processing

Research on fibre processing at Wageningen UR is focused on reduced energy consumption during fibre treatments in the current stock preparation lines, but even more important energy reduction in the total paper production line by appropriate fibre modification. Examples of this are the optimisation of current refining processes, the development of a compression refiner and a new enzyme technology for upgrading of recycled fibre furnishes.

Papermaking Chemistry

Research on papermaking chemistry at Wageningen UR is related to the synthesis of new or more effective chemicals based on natural raw materials. Examples in this area are starch or lignin based adhesives to obtain faster drying or better water resistance, sizing agents, new biodegradable chelating agents and enzymes for control of deinking or process water contamination. Paper and board related research is performed on natural pigments, flame retardants and new ink components.

End Product Quality

At Wageningen UR Research on end product quality is bipartite. On the one hand studies are performed to obtain clear insight in necessary product requirements based on converting processes and consumer demands. On the other hand research is performed on enhancing the performance of end products by specific coatings, changes in fibre raw materials, new functional chemicals or appropriate process control. An example of a project in this theme is 'Optimisation of Stiffness', which is performed in co-operation with the Dutch Competence Centre Paper and Board, paper and board producers, their customers and suppliers of chemicals and paper analysis equipment. The objective of this project is a better control of stiffness of the paper or board product.

By-stream Upgrading and Processing

In different steps in the pulp and paper production processes, reject streams have to be treated and/or discarded as waste material. Research on by-streams at Wageningen UR is focussed on creating commercial value for these liquid and solid by-streams. Example possibilities are re-using lignin from black liquor from the pulp industry as a natural binder and creating added value for rejects from the recycled paper industry by processing coarse rejects (containing fibres and plastics) into fibre reinforced composites.

Information

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