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The New Sticky Removal Agent on the Deinking Pulp Process

Chigusa Taguchi and Satoshi Wada

Kurita Water Industries LTD.

Old newspapers and old magazines are recently used as raw material in the paper mill. These papers contain stickies which are adhesive materials and cause operation trouble such as paper defects, sheet break and a hickey in a printed article. Stickies are fixed to fiber by coagulant for reducing these troubles. However, in some cases, coagulant causes a failure of dirt. Therefore, the technology to remove stickies from paper process is desired. We made clear that the modified nonionic polymer containing hydrophobic group has high performance to remove stickies on the flotation processes.

Polymer Flocculant for the Dewatering of Papermaking Wastewater which Contains the Anionic Trash Materials

Ken Takeda, Kiyomi Okuzawa and Takafumi Inaba

MT AquaPolymer, Inc.

Recently high usage of recycle fiber such as the deinked pulp (DIP) causes the dewatering conditions of wastewater to have been getting worse.

It contains the anion trash materials that causes pitch trouble not only on papermaking process but on wastewater treatment. The cationic polymer flocculants are used for the dewatering of wastewater treatment. But, the operation control of dewatering process cannot be worked well by a containing the sludge from DIP process because of the blockade of the cationic group by the anion trash materials and fine filler.

This paper presents the new combination with the two rheological different polymers indicates the high ability of flocculation for papermaking wastewater contains the anion trash materials.

Numerical Evaluation of Paper Texture

Hideya Naitoh, Kazuo Nishikawa, Yuji Kurenuma and Yusuke Sakai
Tokushu Tokai Paper Co., Ltd.

Hand feeling is one of the most important features of paper, but is often evaluated by sensory qualitative test. In this study, the quantitative measurement of hand feeling, especially ease of flipping pages which is thought to be difficult to evaluate numerically, is investigated.

The use of wearable contact force sensor reveals that ease of flipping pages can be briefly quantified, and furthermore implies that it is possible to measure the delicate difference of sense at the unconscious level.

The Latest Detrashing Technology by IntensaMaXX™

Masamori Tanaka and Takanori Goto
Voith IHI Paper Technology Co., Ltd.

For the latest detrashing system of pulping stage, more effective machine is required because the contaminants ratio of raw material is getting increase recently. The IntensaMaXX™ is the new detrashing machine which fulfills the request for better detrashing operation. The rotor and screen plate are located at the top of the tank, and this layout prevents wearing and jamming by heavy contaminants. The rotor axis is located as eccentric against the center axis of the vat. This layout prevents strong centrifugal flow and also growth of long contaminants. The piping layout is also considered for the better reject removal. At the actual operation, IntensaMaXX™ is saving much power consumption and the cost of wearing parts as well. At the same time, the machine can be operated without any trouble for long time.

New Andritz FiberSolve™ Pulper Rotor Technology

— **Reduce Specific Energy Consumption in Under Machine and Tub Pulpers** —

Yosuke Takeshita and Taku Sato
Andritz K.K.

Andritz has developed FiberSolve™ Pulper Rotor Technology designed to reduce specific energy consumption for retrofit applications in Under Machine, and Tub pulpers.

Computational Fluid Dynamic studies were performed to develop a rotor design capable of improving pulper efficiency. By increasing the pumping effect of our rotor design, versus the older attrition/cutting designs, Andritz has been able to successfully retrofit a wide variety of pulpers to increase capacity and reduce energy with no change to existing drive.

Nuisance Insects, Especially Chironomid Midges, Attracted to White and Colored LED Lamps

Goro Kimura

Technical Research Laboratory, Ikari Shodoku Co., Ltd.

Toshihiro Kusama

Technical Development Division, Ikari Shodoku Co., Ltd.

Junichi Enokida

Wide Area Business Division, Ikari Shodoku Co., Ltd.

Black fluorescent lamps are one of the most effective lamps for light traps. Aquatic insects, such as Trichoptera, Diptera (especially Chironomidae) and Ephemeroptera (especially Caenidae), are known to be attracted by ultraviolet (UV) light (Positive phototaxis). However, there was no significant difference between the attracted number of adult chironomids with a white fluorescent lamp (including UV) and a white LED lamp (not including UV) during the our previous study. In the present study, we attempted to clarify the attractive effect of wavelength on the adult chironomids in the field. The effects of four different light wavelengths were studied using an UV + blue LED lamp, an UV + green LED lamp, an UV+green+blue, and an UV+white LED lamp. An UV+green+blue lamp attracted the highest number of specimens, followed by an UV + green LED lamp. We also collected adult chironomids using light traps with non-attractive lamps, such as a yellow LED lamps (not including UV), a green LED lamp (not including UV), and a white LED lamp (not including UV). A yellow LED lamp attracted the lowest number specimens, followed by a green LED lamp. These results suggest adult chironomids were attracted to both the UV and the visible lights, especially green.

Case Study of the Latest Renovation Project for Grade Change

Jun Kobayashi

Paper Machinery Engineering Dept., Kobayashi Engineering Works, Ltd.

We, Kobayashi Engineering Works, Ltd. has many experiences and records of plant construction in Japan as well as overseas markets extending our utmost respond to client needs since our company was founded.

As the result, we received orders for relocating project at Wang-Sala mill PM9 in 2005 and renovation for product increase of PM9 in 2012. Moreover, a new order of rebuild project at Ban Pong mill PM17 in 2013 from SKIC (Siam Kraft Industry Co., Ltd.), one of the group of leading paper manufacturing company, SCG (Siam Cement Group) in the Kingdom of Thailand.

These repeat orders are the proof that show the client and Kobayashi as the machine supplier have good collaborating relationship and creates great advantages for SKIC.

This report introduces PM17 fourdrinier 3-layer paper machine and large-scale renovation for entire machine changing the grade from corrugating medium to gypsum linerboard, and presents the progress of machine start-up.

Effective Use of Technology Resources

Yasuhiko Shirota

Japan Business Innovation Consulting Co., Ltd.

The program of “Effective use of technology resources” is called “**T**echnology **R**esources **M**anagement Program” . “**TRM**” for short.

“TRM” is management program that builds structure of Effective use of technology resources.

They are used for orientation, such as the product development, the technology development, the stabilization of the production and so on.

That activity will be developed at four points of view.

1. Stocktaking and definition of some technique (the skill) that the company holds
2. Mechanism analysis and value evaluation of the technique and skills that were investigated
3. Making of the technical data and making of the technical strategic scenario
4. Technical succession and TRM's structure construction.

ACA Permi Online Porosity Analyzer for Optimization of Paper Production Process and Caliper Control by ACA RoQ Roll Hardness Profiler

Jyrki Laari

ACA SYSTEMS OY

Tsutae Kumagai

Shin Nihon Coporation

The PERMI, being a fast and reliable on-line porosity analyzer from ACA Systems Oy, helps papermakers to rapidly adjust all grades to specification and carry out fast paper grade changes.

Paper quality variations in the machine direction can be reduced with greater ease when a fast real paper quality measurement is available.

The refining of chemical pulp can be optimized for each paper grade in spite of quality changes in the incoming pulp.

Caliper variations are far too small to be picked up by online scanners or test labs.

Hardness profile is an excellent indicator of paper material being level enough to be wound up.

The main advantages of ACA RoQ roll hardness profile measurement are that the test can be carried out quickly, and that it can identify problematic rolls, which will potentially cause runnability issues.

About Energy Conservation Examples of Initiatives Manufacturing

Yoshitada Jyoukou

Takaoka Mill-Futatsuka, Chuetsu Pulp & Paper Co., Ltd.

In order to prevent global warming which is caused by the CO₂ is a greenhouse gas, while take measures on a global scale, responsibility is increasingly against the corporate environment. Energy saving in the pulp and paper industry, resource saving, and is being promoted efforts to reduce CO₂emissions. In addition, cost reduction by energy saving in terms of production has become a major issue, it is still the situation that must be stacked to further effort.

In our production department established the Energy Conservation Committee in 1990, it has been focused on day-to-day energy-saving activities. While large-scale capital investment has decreased, improvement by large-scale equipment modification is not expected, it is only no status quo will build up a small energy saving.

This time, we will introduce the efforts content and examples that we have implemented.

—Peer Reviewed—

Study about the Evaluation Method of Gloss Unevenness

Kazuhiko Ishizuka and Yusuke Kondo

NPi Research Laboratory, Nippon Paper Industries Co., Ltd.

Kazuya Takahashi

Hokkaido Mill, Nippon Paper Industries Co., Ltd.

The system consisting of a line light source, a line scan camera, and a movable stage was used to evaluate the gloss unevenness of coated paperboards. The pattern of gloss obtained from the images was matched with the gloss unevenness obtained by visual test. By frequency analysis of the images, the amplitude at the specific frequency (wavelength was around 6 mm) had strong correlation with the gloss unevenness of visual test. It indicates that this system is available for evaluating gloss unevenness and analyzing its cause. Also, by the result from paper formation measurement, the major cause of gloss unevenness was the uneven formation of base paper. Furthermore, the sheet formation of the surface layer of the coated board had much more influence to the gloss unevenness than that of the middle layer.