# ACAT PITCH COUNTER (APC)
## Selection and Optimisation of Fixing Agents

**With the ACAT Pitch Counter (APC) the optimal dosage and dosing points can be selected. This method can be deployed easily in paper mills, so plant tests can be accompanied perfectly.**

To achieve an effective reduction of impurities like wood pitch, white pitch und stickies, they should be fixed on fibers and fines in their smallest possible form. This is usually achieved using inorganic and organic fixing agents. For a successful fixation of colloidal materials with minimized agglomeration the type of fixing agent, dosage and dosing point are critical variables. Agglomerates can cause degradation of quality and paper breaks at paper machines.

Nowadays turbidity measurement and charge measurement are used for the selection and optimization of fixing agents. These measuring methods can offer only a simple overview but cannot give information how the colloidal material is fixed and agglomerated.

We want to present a new method to fix colloidal substances on fibers and fines in the desired direction. The advantage of this method is that product selection, determination of dosage and dosage point can be deployed easily in paper mills on site. Following, we show examples for applications and we discuss the different strategies to regulate the dosage of fixing agents.

### Impurities and their costly consequences

With different fibers and chemical additives impurities are introduced into paper machine

*The ACAT–Pitch Counter (APC) can be easily deployed locally in paper mills*

circuits. If they are not treated in their smallest form without undue delay, they later can cause deposits in paper mill circuits and on paper machines. As a consequence paper defects can arise, which often occur if printed and this leads to costly complaints.
Deposits can be formed on different points, even where they are not expected, for example in pumps and screens. In many cases the treatment of impurities with unsuitable additives, treatment on the wrong points as well as the wrong dosages are responsible for these

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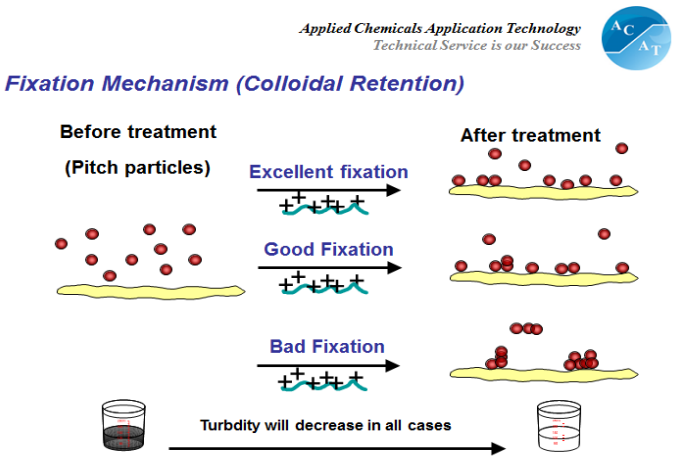
deposits. Changes in temperature and pH-value, shear forces and especially various cationic additives can form not well fixed impurities which later can build agglomerates that can be found as deposits on parts of the paper machine or in the paper leading to loss of production and customer complaints.

### Optimisation with the APC (ACAT Pitch Counter)

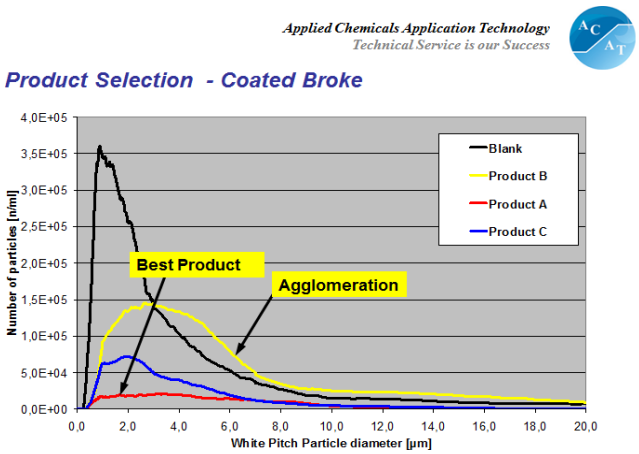
Today we have standard methods like measurements of turbidity, charge and COD but they are not able to give information for the selection of the suitable additive, the needed quantity and the dosage point. For example, an agglomeration of impurities cannot be detected with these methods. The APC-method (ACAT Pitch Counter) gives information how impurities are fixed.

Fig. 1 shows the different mechanisms from perfect to poor fixation. In all cases turbidity will be improved.

Due to the compact design the APC can be easily deployed locally in paper and pulp mills.




*The APC method can improve the turbidity value in all cases (from perfect to poor fixation)*




*Interpretation of APC results*

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## Interpretation of results

In general, on the x-axis, the particle size of pitch and stickies can be read in µm. On the y-axis the number per ml can be read. In this case the study is made with white pitch particles from coated broke. An ideal fixing agent (yellow and red curve) should reduce the number of particles in all size-ranges compared to the blank sample (black curve) without producing agglomerates with smaller particles (blue curve).

With the APC the different fixing agents and dosages that are responsible for these deposits are measured and evaluated in the terms of cost/benefit factor. Then together with the customer an approach is defined.

## Conclusion

With the APC method the optimal fixative, the optimal dosage and the optimal dosing point can be selected. In addition, studies can be carried out directly in the paper mill and so the method is ideally suited to accompany plant tests.



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