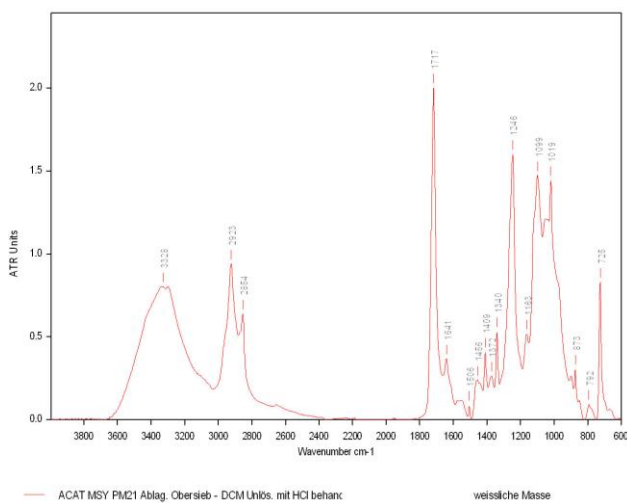


## DEPOSIT CONTROL - FIXATIVES IN PRACTICAL APPLICATION

A Russian board machine had experienced increasing problems with deposits in the wire section. With conventional methods the origin was not detectable. Therefore, only by experiments a solution could be achieved. The application engineers of the ACAT paper technology were able to identify the origin of these deposits by extensive laboratory experi-



*Via IR-spectra it was shown that the deposits were resins from the cellulose fibers used.*

Among other machines at the same plant the customer owns a two-layer board machine. The raw material is provided by an integrated pulp mill. Depending on grade selection program bleached or unbleached grades are used. According to quality requirements also the ratio of short-and long-fibres varies. The problem especially arose when converting from unbleached top coat (kraft liner) to bleached top coat (top liner).

Our chemical technology division is always interested in offering customers the most

advanced solutions. Therefore, over the past years sizing has been converted to ASA. In ASA sizing agents cationic mass starch is used as surface colloid and they contain PAC for deposits reduction.

Our retention system is a single bentonite system, using 1 to 11/2kg BentStar® per ton. The respective dosing points are ahead of the headbox.

When optimizing sizing deposits increased. Particularly in the top wire area massive problems with the related downtimes occurred. However, it was impossible to identify clearly the source. Even with different operational modes of the sizing agent and its components such as mass starch and PAC it could not be evidenced, whether or not the deposits originate from the ASA. This has been the first explanation of all persons involved. And we were far from getting a grip on the problem technologically.

The main task of our paper technologists was the investigation of the root cause. Therefore, samples from the top wire suction box were taken and examined in a laboratory by FTIR (infrared spectroscopy). Via IR-spectra it was shown that the deposits were resins from the cellulose fibres used. Now a solution had to be found.

## DEPOSIT CONTROL - FIXATIVES IN PRACTICAL APPLICATION

In extensive laboratory screenings various products and procedures were analysed. Besides charge measurement and other methods turbidity measurement is an essential parameter. The best samples from these preliminary tests were further tested. Especially the FCM method provided interesting results to substantiate preliminary tests.

With this test method particles in the filtrate can be detected and additionally it is possible to distinguish between bacteria, total counts of particles and hydrophobic particles.

Chemicals are used to reduce the particular hydrophobic particles.

Based on our test results we prepared a machine trial using 1 kg of the fixative FixStar®/ton cardboard in the thin stock and increased the amount of BentStar® to about 2 kg/ton cardboard to solve the problem.

### *Turbidity measurement*

