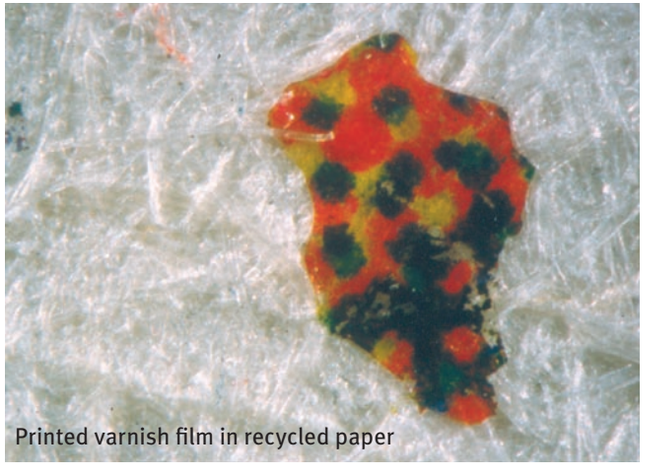
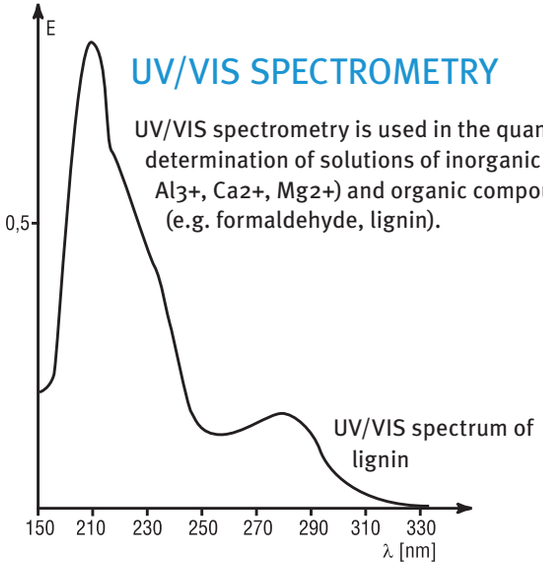
OPTICAL MICROSCOPY AND STAINING METHODS



Printed varnish film in recycled paper

Optical microscopic evaluation is the first step in examining and classifying sample material. Suitable chemical staining methods (spot tests) frequently allow the accurate identification of undesirable specks (e.g. starch, wet-strength agents, polyvinyl alcohol, lignin).



UV/VIS spectrum of lignin

UV/VIS SPECTROMETRY

UV/VIS spectrometry is used in the quantitative determination of solutions of inorganic (e.g. Al^{3+}, Ca^{2+}, Mg^{2+}) and organic compounds (e.g. formaldehyde, lignin).

INSTRUMENTAL PAPER AND DEPOSIT ANALYSIS

OTHER METHODS OF INSTRUMENTAL ANALYSIS

PTS also has available a number of instruments for the routine determination of pH, conductivity, water hardness, COD, AOX, BOD_5 as well as for conducting chromatographic methodes (HPLC, TLC, ion chromatography).

THE BENEFITS TO YOU INCLUDE

The optimisation of product quality and the creation of stable production processes whilst at the same time reducing costs and customer complaints can be rendered much easier by the systematic analysis of specks in papers, deposits, paper components, coating components, defects, coatings, chemical additives, etc.

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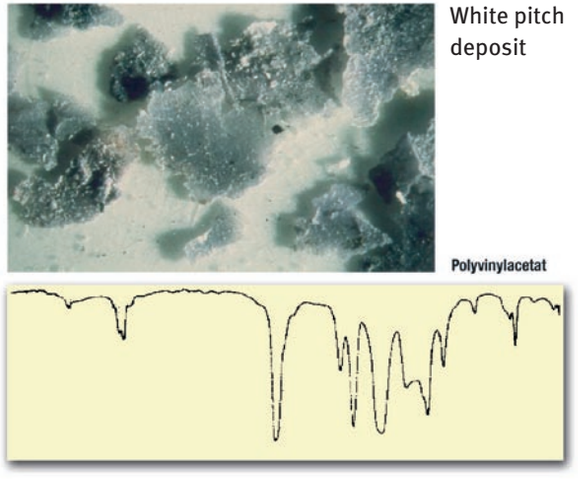
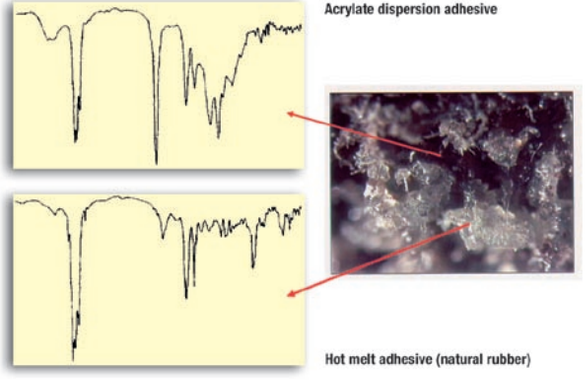
Instrumental paper and deposit analysis

FOURIER-TRANSFORM INFRARED (FTIR) SPECTROSCOPY



FTIR spectroscopy makes it possible to chemically identify organic compounds such as resins, adhesives, binders and additives, for example.



FTIR spectra made with an ATR microscope

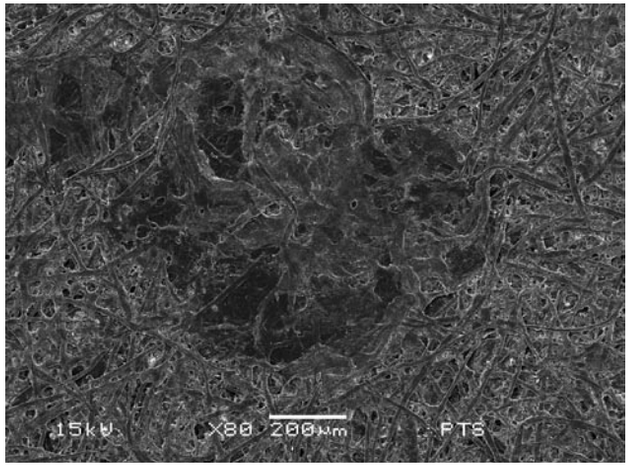
In addition, the ATR microscope is capable of characterising individual fibres and very small specks (approx. 100 µm x 100 µm).

NEAR-INFRARED (NIR) SPECTROSCOPY

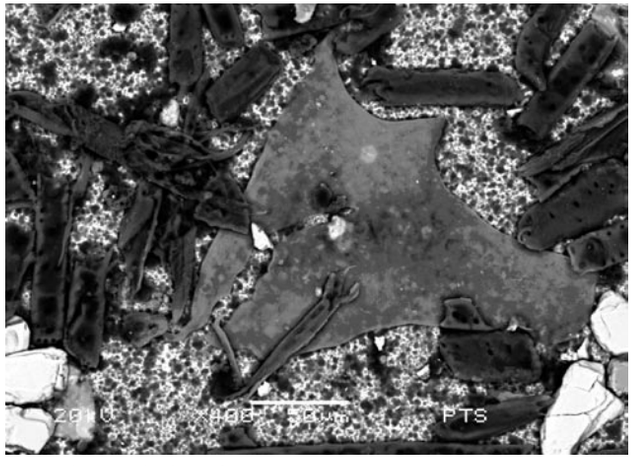
The NIR laboratory spectrometer is an FT spectrometer whose detector operates in a wave-length range from 830 to 2500 nm. This measuring technique is used to obtain non-destructively results from qualitative and quantitative analysis within minutes. One prerequisite for such analysis is appropriate procedure data sets. It is currently possible e.g. to determine fillers, sizing agents or even coating binders.

SCANNING ELECTRON MICROSCOPY (SEM) AND X-RAY MICROANALYSIS (EDXA)

The scanning electron microscope provides high-resolution images of paper surfaces and cross sections which, when combined with X-ray microanalysis, allows qualitative conclusions to be drawn about the elemental composition of the paper.



Deposit on base paper



Deposit on printing plate

INSTRUMENTAL PAPER AND DEPOSIT ANALYSIS