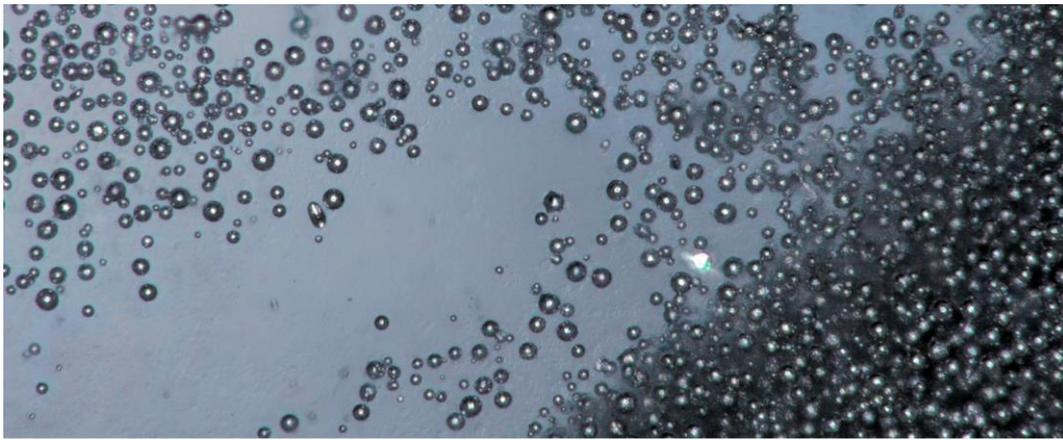


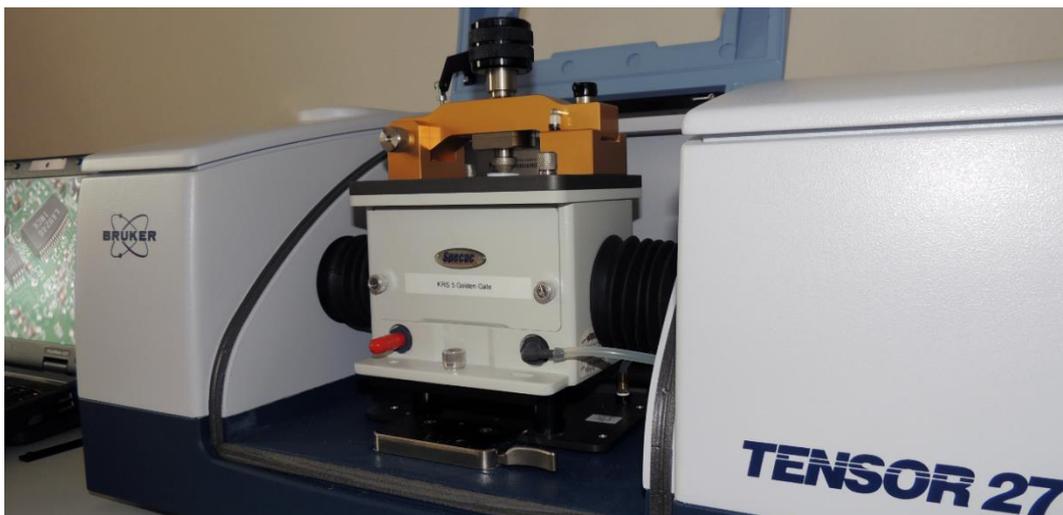
Oxidation effects on solder paste

A „close-up“ Investigation.

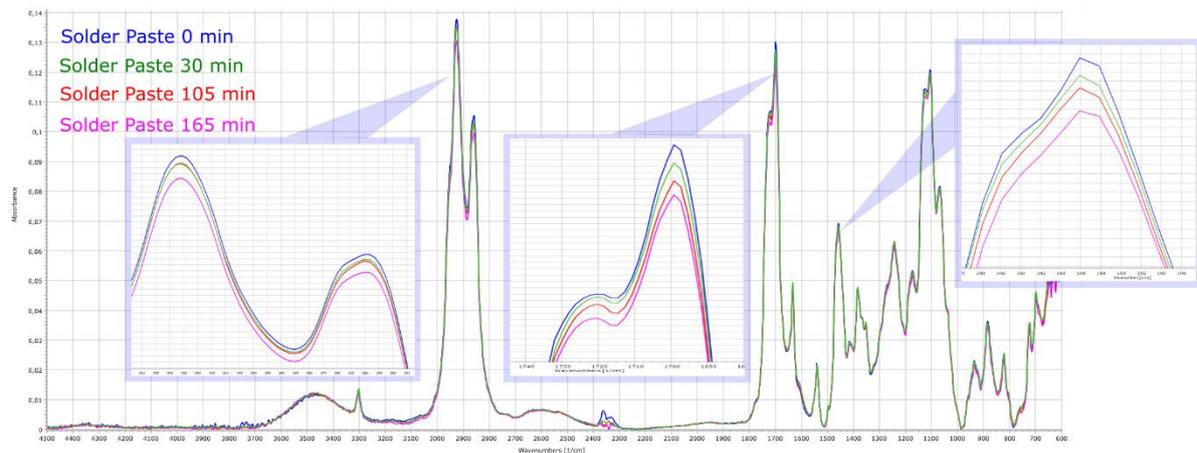
A nearly endless variety of solder pastes exists on the market. Each of them is different in its composition, an optimal process window as well as specific properties, such as printability, stability and void formation. There is the optimal product on the market for every application. After opening the solder paste and in the time between printing and placement, even the smallest of influences can change the properties of the solder paste and thus influence the soldering result.



What is happening inside the solder paste just a few minutes after it has been opened was investigated by specialists from Rawinski GmbH using the FT-IR spectrometer from Bruker, type Tensor 27. A diamond ATR measuring cell provided fast and precise results thanks to its excellent optical properties.



With a high resolution the influence of oxygen and humidity on the solder paste was investigated in a "close-up". A solder paste (Sn96.5, Ag3.0, Cu0.5) was analyzed over a period of 3 hours. Infrared spectroscopic analysis clearly shows an immediate start of chemical reactions, such as oxidation processes, after opening the solder paste. The signal of these reactions is different from that of a purely physical humidity attachment from the air.



CONCLUSION:

After just 30 minutes irreversible oxidation processes are already visible, which can affect the solder paste's properties. Therefore, it is important to keep the time between opening and processing as short as possible.