

# *Taking the sintering pastes to a new level*

**EDX analysis of sintered Ag/Cu pastes for Nano-Join GmbH**

**Nano-Join GmbH is a young technology company located in Berlin, Germany. The company is focusing on next generation sintering technologies for electronic high-performance components within optoelectronics, e-mobility or renewable energies.**



## ***Challenges and Need***

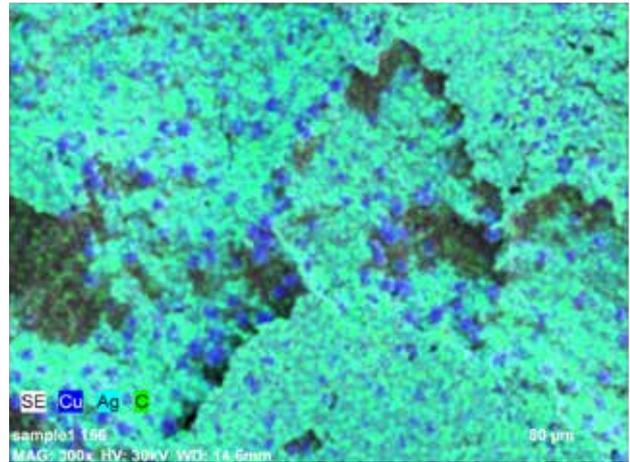
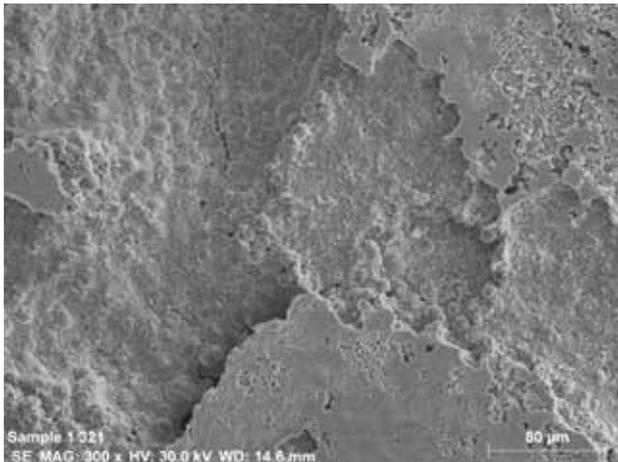
The scope of this analysis is to evaluate the sinter behavior of the Copper/Silver components present in the paste and inspect how they are distributed in the sintered solid material. These data is very useful for Nano-Join as they will be able to realize further improvements and developments and can better describe the application processes for the end user.

## ***Services***

The Mads Clausen Institute carried out the measurements and the data analysis. The equipment used is a SEM Hitachi S-4800 with a Bruker EDX add-on able to provide directly high resolution images and EDX information for material quantification.

## ***Results***

Various samples were analyzed with different Ag/Cu concentrations in order to observe the distribution of elements in a sample and if there are any carbon traces. From the EDX analysis we observed that there are small carbon traces in all samples and that the distribution of Ag/Cu changes slightly based on the Ag/Cu concentration. In addition the elemental mapping gave the company information of the distribution of the elements on a sample (Fig. 1). Hence Nano-Join GmbH obtained valuable information of how their pastes look like, how the Ag and Cu materials mix in a sample, and how samples should be prepared for future measurements to avoid any loss of information.



**Figure 1. SEM image (left) of a Ag/Cu paste and the equivalent element map (right).**

### Quotes from our customers

"As a SME Nano-Join GmbH is not able to carry out all needed analytics by itself and to own all important machinery. Therefore, it was really helpful to get access to the needed measurements via BalticTRAM. Our partner in this project was SDU. We had from the start very good processes as well as very competent contacts and got all information we needed to realise further development steps. Thus, in the end the project was very successful for us and we are lucky that the costs were handled via BalticTRAM."

**Dr. Adrian Stelzer, Nano-Join GmbH**

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