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Webinar: Thermal conductive solutions for metal replacement and lightweighting

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Q&A

Webinar Question	Response
How easy is it to overmould or weld a high conductive material to a standard PA?	Not yet experienced but we think it is manageable
Don't the hardness of BN loads in products degrade injection tools and moulds?	This should be checked in a long term run, considering the specific tool with its own quality of the components. In our current experimental phase, we don't have figures, by the way there are literatures that experimented to big difference vs highly filled glass fiber compounds
How important is the influence of the orientation by injection molding regarding the heat conductivity homogenous?	Orientation, as well as Dispersion is very important to maximize Thermal conductivity
How does humidity uptake of PA and glass transition temperature effect the thermal conductivity of the compound?	In case of polyamide, the humidity % shifts the glass transition and can this way lead to significantly different thermal diffusivity values. Whether these can result in higher, unchanged or lower thermal conductivity is difficult to predict, since the change in density and specific also need to be taken into account
Hi, is that material are UV resist, or the base material can be UV resist	With ZTE product range, due to the nature of additives that are intrinsically UV absorber it is possible to achieve good UV resistance. With ZT product range, UV stabilization must be developed and analyse case by case, as well as UV aging.

Hello! What's the meaning of e.g. X61, X62, X41, ...	First digit represent the nature of the additive (f.i. 6=BN; 4=Graphite), second digit represent different type of the same additive (f.i. different purity or granulometry or particle size distribution or …)
Thank you for the presentation. Which software programs do you use for simulation? (rheology, thermal and mechanics)	We use several simulation softwares: Moldflow, AutoDesk, Ansys, Digimat, …
What is ICG ?	Industrial & Consumer Goods
What is the effect of your additives on the long term hydrolysis resistance of Polyamides grades?	We did not perform yet HR tests. We think that with PA6.6 we can achieve good results
Does the surface roughness influence the LFA measurement	Yes it can influence the results, also thinking that the specimen must be evenly coated with graphite before testing. Therefore we always suggest to create smooth surfaces, thus minimizing the energy input into the material (polishing, grinding) in order not to change the materials properties.
What is the induced surface temperature with the LFA system	The temperature increase with each shot is in the mK-range. Therefore the detector needs to be cooled with LN2, so to improve S/N and the signal is also amplified.

Wow big is the laser spot compared to surface of test sample	The only part of the sample which is not illuminated is where the sample is placed on the sample holder (sample holder frame) I the reason why we have different sample holders for standard samples (diameter/thickness ≤ 5/1) and thick samples (diameter/thickness > 5/1). Remark: Netzsch introduced a patented system of software controlled lens called " Zoom Optics". This improves the field of view of the detector by focusing the detection area on the sample, thus eliminating any influences caused by aperture stops. The result is a significant increase in the precision of the measurement results. Moreover, the LFA can take into account the real shape of the sample, i.e in case of a square sample the pulse illuminates a square area and this allows for higher accuracies, because in case of a round spot lateral diffusion would lead to an over-estimated heat transfer