Carbon Nanotube Comparison of Companies

Application Note 128

Samples of carbon nanotubes from four different manufacturers intended for the same application were selected for wetted surface area comparison. Samples were dispersed in the liquid NMP at room temperature, then mixed by paddle stirrer followed by sonication. Approximately 0.5ml of each sample was placed into sample tubes. All measurements were conducted at room temperature. All samples were tested using the AreaQuant method Surface Area by T2.All samples showed a single exponential relaxation time, suggesting the particles were not aggregated.

While samples from Company B&C are similar,the results clearly indicate a meaningful difference in wetted surface area between manufacturers. These measurements demonstrate the utility of the Acorn Area to in raw materials selection.

Sample Name	Company A	Company B	Company C	Company D
Concentration	0.5%	0.5%	0.5%	0.5%
Relaxation Time	176.4	269.2	274.4	618.5
Relaxation Rate	0.005669	0.003715	0.003644	0.001617
Bulk Liquid Name	NMP	NMP	NMP	NMP
Relaxation Time	1958.2	1958.2	1958.2	1958.2
Relaxation Rate	0.0005107	0.0005107	0.0005107	0.0005107
Volume Ratio	0.002348	0.002348	0.002348	0.002348
Ka	0.0228	0.0228	0.0228	0.0228
Specific Surface Area m2/g	**96.35**	**59.85**	**58.53**	**20.66**