

### A screen-printable paste with high thermal conductivity

Unitika Ltd. has developed a screen-printable paste with high thermal conductivity. PC boards printed the paste will be widely applicable against heat dissipation in electric devices for automobiles, personal computers, home video-game machines, and cellular phones.

As electronic devices have been downsized, the space for heat-emission is decreasing and the heat design in becomes an important technology. Heat-sinks, cooling fans, and carbon-sheets are employed to radiate excess heat.

The new paste is an aqueous solution (organic solvent free) which contains thermally conductive inorganic fillers with special size and thermosetting resin. It has suitable viscosity for screen printing. Since the paste is electrically conductive, it cannot be applied to where requires insulation.

The paste is printed on a glass-epoxy substrate and dried. It is necessary to compress the dried layer to obtain enough thermal conductivity. It was piled up with copper foil and an insulator and heat-pressed to form a printed circuit followed by mounting a 1k-ohm resistor. It shows less than 100 degC surface temperature compared with around 150 degC without paste application.

