

(VI) Super Fine Particles of Metal and Ceramics

Along with the advancement of electronic materials, those with higher function and of extremely small size, i.e. super fine particles below 1 μ m as is strongly required. In particular, lowering the sintering temperature by using the mixture of super fine particles and super fine supporting material would directly raise the production costs. On the other hand, demand for lower material (or component) price is very strong due to depressed export market and severe price competition. In general, these contradictory requirements can be analyzed as follows:

- (a) If material cost is 10% lower with equivalent quality, electronic component manufacturers would rush to such material, regardless of whether the supplier is experienced or not.
- (b) If cost is up by 20% to 30%, though with quality improved by 10%, such product will not be used.
- (c) If cost goes up by 10%, with quality up by 30%, such product would be negotiable.

This cost - quality correlation is also applicable to binders.

It seems to be a very challenging and at the same time a very laborious task to break through the barriers mentioned above, especially with (c).

(VII) Evaluation Method of Functional Materials and Organizations Providing Evaluation Services

1) Evaluation Method

Laboratories or Analysis Institutions require informations on the material structure as well as its prospective application for evaluation. An evaluation method generally applicable has not been established yet.

* Reference

"Report on the Study for Standardization of Fine Ceramics" by Fine Ceramics Association; March 1986

2) Organizations Providing Evaluation Services

(a) Public Organization

◦Nagoya-shi Industrial Research Institute
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*Joint research is client's premiss by temporary