

**The preparation of coated copper powder with
anti-oxidative properties**

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MLCCs are the most important passive component used in electronic devices such as flat panel displays (FPDs), computers, cellular phones, and other devices. Recently, the MLCCs have been made smaller in size and larger in capacity and will become indispensable for future electrical devices. In the MLCCs, copper is used for outer electrodes and nickel is used for inner electrode. However, the nickel has ferromagnetic properties which do not allow the use of capacitors at very high frequencies. The copper has high electrical conductivity, low ESR (Equivalent Series Resistance) and high Q at high frequency. Thus, recently, the copper has been selected and used as the material not only for the outer electrodes but also for the inner electrodes of MLCCs. However, Fine copper powders for electrodes are easily oxidized at a relatively low temperature which hinders its further application, resulting in increasing the annealing temperature, and reducing the electrical conductivity. Thus, in this study, we used glass as capping material in which the glass is one of the compositions consisting of conductive paste for electrode. The copper powder with glass passive layer of 2~4nm prepared by aerosol process was very effective to embody thin film with high densification by improve sintering driving force.