Microelectronic Process Engineering

Identify, improve, recommend, and implement measures to improve production methods, equipment performance, process capability, and product quality in the area of Surface Mount Technology (SMT) and hybrid microelectronic assembly. Create manufacturing processes, and conduct defect and failure analysis, engineering evaluations, statistical analysis and implement corrective actions to support process improvement efforts and ensure root-cause analysis translates into process improvements when appropriate. Leads the development of design documentation, materials and designs for manufacturability, provides feedback to the customer. Streamline manufacturing processes, procedures, work instructions to improve first pass yield, eliminate rework and scrap, standardize and reduce SMT and hybrid microelectronic assembly setup and changeover times, reduce waste, monitor SMT and hybrid microelectronic assembly processes and establish robust, repeatable, and reproducible process parameters and process controls. Provide guidance, direction, and coordination to the technical staff thereby contributing to improvement of skill levels, quality standards, process improvements, problem solving abilities, and continued technical development through education to achieve the six-sigma SMT and hybrid microelectronic assembly processing level. Design and order solder paste stencils. Create oven reflow profiles for SMT circuit boards, develop process parameters for wirebonding, flip chip and other advanced interconnection assembly processes. Develop appropriate secondary SMT manufacturing processes: rework processes, hot air, BGA repair. Monitor and manage PCB cleaning processes. Design experiments to develop optimum production processes including solder paste selection and deposition, stencil designs, selective soldering techniques, wirebonding, flip chip interconnection, die attach etc.