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MANUFACTURING SERVICES

**In association with Bob Willis of [ASKbobwillis.com](http://ASKbobwillis.com)**

# PACKAGE ON PACKAGE (POP) ASSEMBLY, REWORK AND INSPECTION WORKSHOP

***"It's new technology, growing in popularity and for design teams, limited by space, the only way is up!"***

*"In simple terms PoP represents the stacking of components one on top of another either during the original component manufacture or during printed board assembly. As real estate is at a premium for logic and memory, PCB designers say the only way to go is up and up!*

*PoP packaging systems may include direct soldering, wire bonding or conductive adhesives for device to device interconnection. The use of multiple die stacked one on top of the other is used on a number of packaging solutions"* Bob Willis

**Bob Willis currently operates a training and consultancy business based in England and has one of the largest collections of interactive training CDs in the industry. Although a specialist in implementing lead-free manufacture Bob has provided worldwide training and consultancy in most areas of electronic manufacture and design. This is based on working for OEM and contract assembly, printed board manufacture and environmental test facilities. Throughout his career he has earned great acclaim and many awards.**

This is the first of the three practical workshops on Package on Package (PoP) Assembly, Rework & Inspection; the first location will be on site at **Axiom Manufacturing Services, Newport.**

*"I have worked with the engineering and quality team at AXIOM for many years and it's a pleasure to run one of my first PoP workshops at the Newbridge facility, which has seen recent investment in a fully automated PoP assembly capability for its Fuji AIM SMT placement platforms, in response to significant interest in PoP technology from its customers."*

**Location:** **Axiom Manufacturing Services,**
**Technology Park,**
**Newbridge,**
**Newport,**
**South Wales.**
**NP11 5AN**

**Date:** **Tuesday 24th November, 2009 09:30 – 16:30**

"Package on Package (PoP) applications are growing in popularity for mobile and handheld professional electronics applications and with it placing further demands on assembly engineers."

## Workshop Outline

PoP is new to many contract and OEM assembly staff but with the demands of paste dipping, reflow warpage, increased placement accuracy/Z height control process introduction can be demanding. The difficulty in multi level ball inspection can be a challenge for x-ray equipment procedures as level one balls, can mask level two and three interconnections. Manual inspection can be used but with these applications space is often not available for side viewing.

**Who should attend this workshop?**
This event is ideally suited to **design, production** and **quality engineers** looking at future technology and maintaining a company technology roadmap. It's vital to subcontractors to be up to date with new technology and its possible implementation along with material and equipment requirements for future customers.

**Each delegate will receive a FREE set of Package on Package inspection and quality control wall charts covering optical and x-ray inspection, dip flux and paste application, placement criteria and defects seen during assembly.**

**Workshop topics include:**

- What is Package on Package (PoP)?
- Benefits of PoP Stack Packages
- Component Standards
- Component Types
- JEDEC Standards
- PCB Design Rules
- Pad Layout
- Via Hole Connection
- Lead-Free Assembly
- Engineering Interviews
- Stencil Printing
- POP Placement
- Tack Flux
- Dip Solder Paste
- Reflow Soldering
- Convection
- Vapour Phase
- Temperature Profiling
- Inspection
- Optical Inspection
- X-ray inspection
- Underfill
- Rework
- Package on Package Defects

**For further details on the workshop and to book your delegate place go to [www.bobwillis.co.uk/PoPWorkshopsAxiom.pdf](http://www.bobwillis.co.uk/PoPWorkshopsAxiom.pdf)**

**Supported by:** INDIUM CORPORATION, ITRI, O'DELL REWORK solutions