

Short Course Title: Fundamentals of RDL Technologies for HDI Substrates and Interposers

The short course will focus on providing the basic concepts involved in RDL technologies and their applications targeted toward AI/HPC/wireless that require high IO density and fine IO pitch substrate interposers. The short course will cover the following topics; 1) Market segment and requirement of substrate/interposer, 2) Interposer technology options, 3) Dielectrics needed for high speed and high frequency circuits, 4) Fundamentals of fabrication processes for RDL including lithography techniques, semi-additive processes (SAP, m-SAP, a-SAP), microvia formation methods, optical Interconnect, Package vs. Semiconductor in fabrication processes, 5) Aspects of Mechanical and Electrical Reliability, 6) Future trends, challenges and potential solutions (including Larger interposer dimensions etc.). This short course (duration: 90 minutes) will be co-taught by Mr. Fuhan Liu and Dr. Mohan Kathaperumal of 3D Systems Packaging Research Center.

Who should attend: Engineers working on Panel PCBs, HDI-PCBs, HDI substrates, Glass and wafer Glass and silicon interposers.

Bio of Fuhan Liu:

Fuhan Liu graduated from the Department of Physics, Fudan University in Shanghai, China. He is a senior research engineer at the 3D Systems Packaging Research Center, Georgia Institute of Technology. His research is focused on next generation ultra-high density substrates, interposers and fan-out packages on panel based organic and glass substrates. He has developed and demonstrated pioneering and leading edge technologies in the three key areas of RDL including (1) finer line routing - low cost 1 um lithography for large body size low resistance RDL, (2) smaller microvia - innovative microvias with via diameter scaling down to 2 to 1 um with via pitch of 8 um by using photo and UV laser ablation and (3) process methodology - organic damascene process (ODP), an alternative RDL fabrication platform of current semi-additive process (SAP).

Bio of Dr. Mohan Kathaperumal:

Mohanalingam (Mohan) Kathaperumal received his Ph.D. in Chemistry from Indian Institute of Science, Bangalore in 1994. Following a 4 year (KAST and Waseda University) stay in Japan, Mohan worked as a Research associate/Scientist at the University of Arizona and as an associate director of Optical/dielectric Materials research at Nitto Denko Technical Corporation in Oceanside, CA. Mohan joined as a Senior research scientist at Georgia Tech's Chemistry department in 2010 and currently he is a senior research engineer at the 3D Systems Packaging Research Center.