

Super-Fine Ink-Jet Printing- as a Novel Direct Patterning Process

Kazuhiro Murata;SIJTechnology; Tsukuba, Ibaraki, Japan

Abstract

The Ink-jet method is the effective technology as a process to functionalize the by setting a functional material required for a required place. But conventional inkjet technology has a limitation in resolution of a few tens of micro-meters. We have developed a super-fine ink-jet technology (Super Ink Jet - SIJ) that enables the formation of fine features less than a micro-meter in diameter. Furthermore, the printing method is not limited by the tight viscosity requirements of normal inkjet inks and allows the use of a wide variety of inks: e.g. nano-metals, semiconductors, insulators, light emitting polymers, bio-materials etc. Using this method, the direct fabrication of circuits and three-dimensional structures with feature sizes of just a few microns has been achieved. The potential of the SIJ technology and its application to cutting-edge areas, such as flexible and printed electronics, fine-pitch direct interconnects and others will be shown.

Author Biography

Kazuhiro MURATA is a CEO and founder of SIJTechnology, Inc. He received his BA (1989), ME (1991) and Ph.D (1994) in Engineering from the Tohoku University.

Since then he has worked in the Electrotechnical Laboratory. From 2001 he has been working at Nanotechnology Research Institute in National Institute of Advanced Industrial Science And Technology (AIST), 2002- 2011, Team Leader, Collaborative Research Team of Super Inkjet Technology, 2011-2012 Team Leader of Flexible electronics Research Center, AIST.

From 1999-2000, He has been working at Cavendish Lab., Cambridge Univ. as a Visiting Researcher.

Based on his developing technology, he is founded AIST venture company, SIJTechnology, Inc. and he has working as CSO. From 2012 to present CEO of the SIJTechnology, Inc.