



Press Release

Leti and Replisaurus Reach Milestone in Project to Commercialize ElectroChemical Pattern Replication (ECPR) Metallization Process

Two Years after its Launch, Common Lab Positions Replisaurus To Offer ECPR Metallization Process for Customer Evaluation

SAN FRANCISCO, Calif. – July 13, 2011 – CEA-Leti and Replisaurus Technologies, Inc., a developer of a metallization technology for integrated passives, copper pillars and 3D integration (TSV), today announced that they have completed a crucial step toward commercialization of Replisaurus' innovative ElectroChemical Pattern Replication (ECPR™) metallization process.

In less than two years since launching their common lab at Leti, the two partners have optimized the ECPR master process (the master is a 200mm or 300mm silicon wafer filled with copper and sized for final structures to be patterned). The technology is now mature enough to be applied on customer target products for evaluation.

ECPR is a cost-effective alternative to the dual damascene process that provides deposition of copper structures in excess of 3µm thick with 5µm or less spacing between features. It eliminates the requirement for CMP or photolithography equipment or related materials, as well as the need for solvents.

The common lab team demonstrated an efficient high-resolution etching process offering near-vertical sidewalls of the copper patterns on the target wafer. The process has been optimized to ensure no sidewall defects all across the wafer, even at the extreme edges, and to achieve high aspect ratio, 2:1 or greater where line spacing is $\geq 3\mu\text{m}$. Leti's advanced capabilities enabled a nearly 100 percent process yield. The project also is strongly focusing on reliability studies to guarantee the same sub-micron resolution in the numerous filling/transfer/cleaning cycles during wafer processing.

Replisaurus' ECPR Applications Laboratory and Customer Demo Center has been based at Leti's facility in Grenoble since the fall of 2010. Improvements of each stand-alone module necessary for the ECPR process have been carried out through the Replisaurus/Leti common lab agreement.

Leti and Replisaurus engineers also have demonstrated the ability to print copper lines aligned with sub-micron overlay tolerances. In the coming months, the demo center will receive the first integrated ECPR production tool that gathers the master prefilling, the printing and the cleaning modules into an all-in-one system.

Replisaurus Technologies is close to the final stage and expects to offer silicon evaluation of this exciting new technology on customer products.

About CEA-Leti

Leti is an institute of CEA, a French research-and-technology organization with activities in energy, IT, healthcare, defence and security. Leti is focused on creating value and



innovation through technology transfer to its industrial partners. It specializes in nanotechnologies and their applications, from wireless devices and systems, to biology, healthcare and photonics. NEMS and MEMS are at the core of its activities. An anchor of the MINATEC campus, CEA-Leti operates 8,000-m² of state-of-the-art clean room space on 200mm and 300mm wafer platforms. It employs 1,400 scientists and engineers and hosts more than 190 Ph.D. students and 200 assignees from partner companies. CEA-Leti owns more than 1,700 patent families.

For more information, visit www.leti.fr.

About Replisaurus Technologies

Replisaurus Technologies, Inc. has developed a revolutionary metallization technology targeted at key growth markets such as integrated passives, copper pillars and 3D integration (TSV). The ElectroChemical Pattern Replication (ECPR™) process offers a simple and cost effective integrated solution eliminating several traditional process steps thereby reducing complexity. ECPR is a fab-friendly, environmentally clean process which does not use any solvents, developers or strippers and has extremely fast plating rates. In 2008, replisaurus acquired SET, a world leading supplier of high accuracy die-to-die, die-to-wafer bonding and nanoimprint lithography solutions. For more information visit www.replisaurus.com.

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