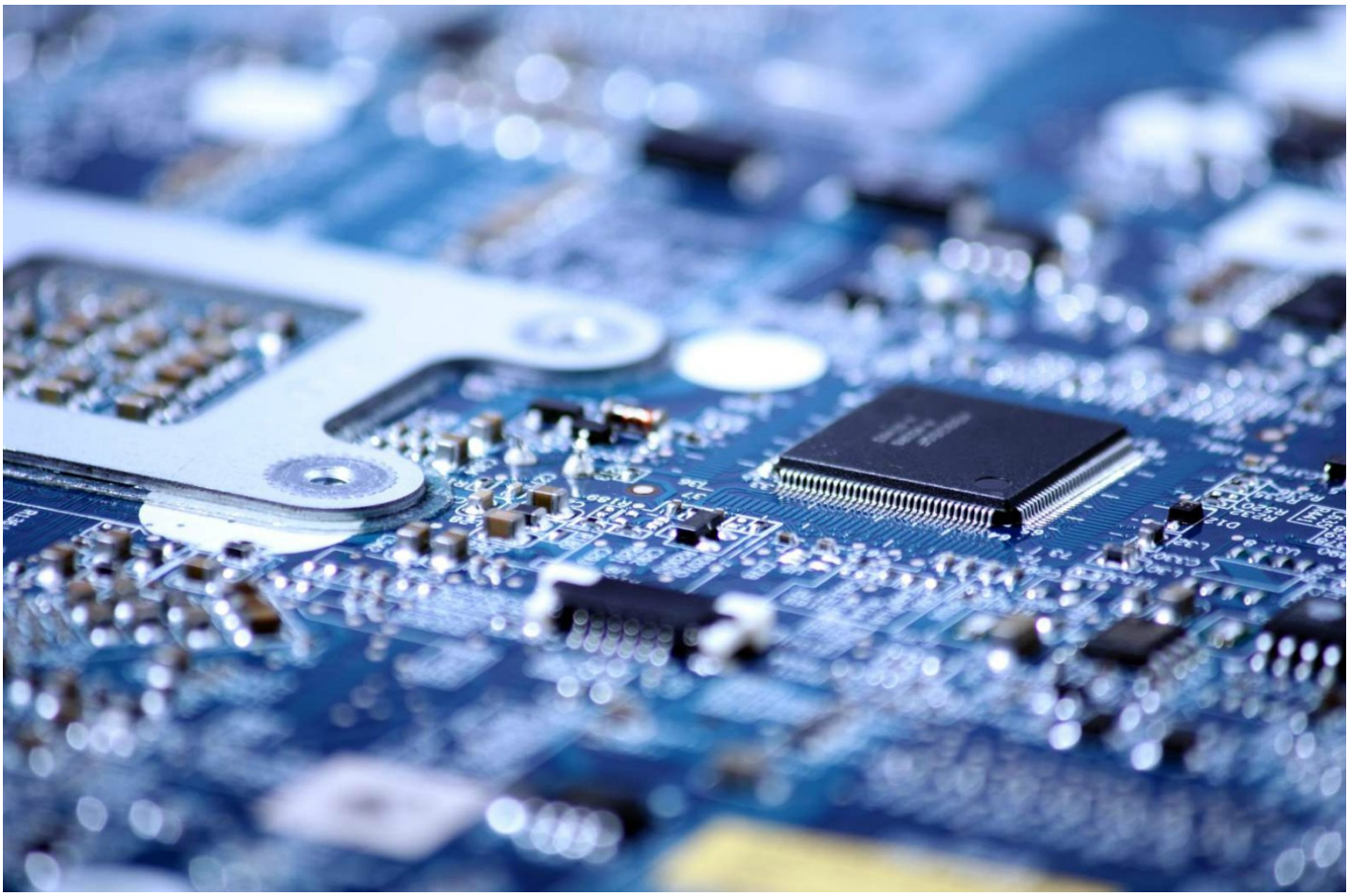
Magnetic Imaging Identifies Microchip Failure Quickly, Accurately

Brown University



When microchips fail in semiconductors and electronic devices, the root cause can be difficult to diagnose. Complex circuits and equipment often have to be painstakingly disassembled piece by piece, and even then the reason for the system failure might never become clear. As wires in such microchips grow smaller and denser, failure caused by atom migration within the wires is becoming more common.

Along with colleagues at the Brown University Nanoscale Physics and Devices group, physics professor Gang Xiao, Ph.D., developed magnetic imaging technology that allows the visualization of electric current flow within microchips. Xiao formed Micro Magnetics, Inc., in 1998 to pursue the commercial application of the technologies he was developing at Brown. Based in Fall River, Mass., Micro Magnetics obtained an exclusive technology transfer license with the university, and created the Circuit Scan 1000 (CS1000), a highly sensitive diagnostic microscope for the semiconductor and electronic industry.

> *Since the micropscope doesn't touch the equipment it's scanning, there is no risk of damage, and semiconductor owners can isolate and analyze problems more efficiently than ever before.*

The CS1000 uses the technology developed at Brown to produce high-resolution visual maps of electrical current in microchips. Noninvasive and brief (less than two hours for a high-resolution scan), the magnetic imaging can diagnose short circuits, hot spots, leakage and other problems not visible through less advanced microscopic techniques.

For more information, visit micromagnetics.com/index.html.

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