

Advanced Integration Program at BRIDG and the Reliability Issues With 2.5D / 3D Integration

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Abstract

The advent of Internet based activity (Mobile and connected devices, cloud based operation) is driving the microelectronics industry to come up with faster devices and smaller form factor. The traditional route to the CMOS miniaturization at device level scaling is almost close to its limit. The need for next generation smart sensors and other advanced devices is steering the semiconductor industry to look at materials beyond silicon. Our effort at BRIDG is to address this challenge through technology programs aimed at package level scaling and novel materials growth on conventional silicon platform. The advanced integration program at BRIDG aims at developing interposers with signal input/output (I/O) channels an order of magnitude higher than typically achieved. However, there are several pre and post processing challenges associated with such interposer development. This presentation will discuss the advance integration activity being pursued at BRIDG followed by discussion on some of the key challenges related to the device reliability.