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Monolithic 3D Chips

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Message from the Guest Editor

The recent development of through-Si-via (TSV)-based three-dimensional (3D) integration has been a breakthrough in semiconductor packaging. It allows higher density, higher bandwidth, and smaller power consumption by 3D stacking, which have created new generations of memory chips such as hybrid memory cube, high bandwidth memory, etc. Furthermore, it has accelerated optoelectronic integration such as in image senor application, with additional benefits such as a smaller form factor, economical use of different technology nodes at each layer, etc. However, vertical alignment accuracy in TSV technology is still limited in the micrometer scale, despite showing continuous improvement. Therefore, to achieve the full potential of the 3D chip stacking/3D integration, monolithic 3D (M3D) integration has to be developed in various aspects, such as process technology, design strategy, and the discovery of new applications with increased functionality. Accordingly, this Special Issue seeks new, original contributions on “Monolithic 3D Chips” in this research society.

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Special Issue

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Message from the Editor-in-Chief

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