ABSTRACT

The concept of 3D integrated circuits (3D-ICs) provides new opportunities for meeting current and future design criteria, such as performance, functionality, delay, and power consumption. 3D-ICs are thus considered as a promising approach to spur both More Moore (i.e., further down-scaling of baseline CMOS device nodes) and More-than-Moore (i.e., diversification of functionality; heterogeneous system integration) [1,9] as shown in Figure 17.1. At the same time, 3D-ICs increase complexity for manufacturing and physical design notably.