3D INTEGRATION for VLSI SYSTEMS

edited by
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Chapter 1

3D INTEGRATION TECHNOLOGY – INTRODUCTION AND OVERVIEW

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1.1 INTRODUCTION

The past decade has seen three-dimensional (3D) integration technology mature rapidly from a hypothetical concept to a technology that is on the cusp widespread commercial implementation. This rapid trend towards acceptance of 3D integration has been both a result of key demonstrations of the technical feasibility of the process, as well as a growing consensus that 3D integration will be necessary to continue current computational system performance trends. 3D technology also offers an abundance of opportunities for new applications and functionality. In this introduction, we provide an overview of the system needs that are driving 3D integration development, the recent advances in the underlying technology that have been key to its recent acceptance, and new opportunities for additional functionality that 3D has the potential to provide.

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