

# Foreword

Teachers of advanced undergraduate and graduate courses in VLSI design have for several years lamented the non-existence of a book like this one. There exist books on VLSI algorithms for the student whose primary interest is algorithms and not VLSI. These books reduce the scope of problems below what must be implemented in CAD tools while, at the same time, pushing mathematics prerequisites beyond those usually possessed by students in Computer Engineering. Those books which have treated the issues of placement and routing at the engineering level are now out of date and with passing years have come to appear superficial. This book treats current issues at the appropriate depth.

Sadiq M. Sait and Habib Youssef have limited the scope of this volume to chip layout. Treatment begins at a point after synthesis and net-list manipulation are complete. Simulation can be accomplished before and after, but is not one of the issues addressed herein. Thus, the authors are able to provide a comprehensive analysis of every classic chip layout level topic from partitioning and floorplanning to routing and compaction. In every chapter there is space for treatment of all competing approaches.

This book will be must reading for the next generation of CAD tool developers and will strengthen the hand of the more casual student who must choose intelligently among available vendor supplied tools. The book contains more than enough material for a one semester graduate course. It will serve as the primary text for a course limited to layout. It should become a resource for any course on VLSI design. As soon as the book becomes available, my colleague and I will integrate it into our Computer Engineering course on CAD algorithms at the University of Arizona.

I have known Sadiq M. Sait since the time of his Ph.D. dissertation. I endorsed at its inception the project that led to this volume and predicted solid results. My initial confidence has been more than justified.

Dr. Fredrick J. Hill, Professor,  
University of Arizona,  
Tucson 85721 AZ,  
USA.