

Jens Lienig · Juergen Scheible

Fundamentals of Layout Design for Electronic Circuits

This book covers the fundamental knowledge of layout design from the ground up, addressing both physical design, as generally applied to digital circuits, and analog layout. Such knowledge provides the critical awareness and insights a layout designer must possess to convert a structural description produced during circuit design into the physical layout used for IC/PCB fabrication. The book introduces the technological know-how to transform silicon into functional devices, to understand the technology for which a layout is targeted (Chap. 2). Using this core technology knowledge as the foundation, subsequent chapters delve deeper into specific constraints and aspects of physical design, such as interfaces, design rules and libraries (Chap. 3), design flows and models (Chap. 4), design steps (Chap. 5), analog design specifics (Chap. 6), and finally reliability measures (Chap. 7). Besides serving as a textbook for engineering students, this book is a foundational reference for today's circuit designers.

This is a welcome and very important new reference book for both students and practicing microelectronics design engineers. It fills a gap in pedagogy that has been growing over time, by building from foundations while spanning layers of system architecture and integration, as well as both analog and digital layout.

Professor Andrew B. Kahng, University of California San Diego

This book is an excellent introduction, covering where we are now, the key problems we currently face, and also providing a glimpse of what is to come. The authors are respected leaders in the field, with deep knowledge; they cover the material in a crisp and clear manner, making this text a great resource for anyone, from the new student to the seasoned expert.

Associate Professor Patrick H. Madden, Binghamton University

This book covers fundamentals of IC mask or layout design with a strong emphasis on the technological background, the practical design and verification steps, and the analog and reliability issues. I find the book worth reading. It equips students and junior engineers with comprehensive layout design knowledge.

Professor Mark Po-Hung Lin, National Chiao Tung University, Taiwan

The combined expertise of the authors and the attention they have paid to theory and practice, big picture and detail, illustrative examples and written text, make this book the perfect go-to resource for students and engineers alike.

Professor Laleh Behjat, University of Calgary

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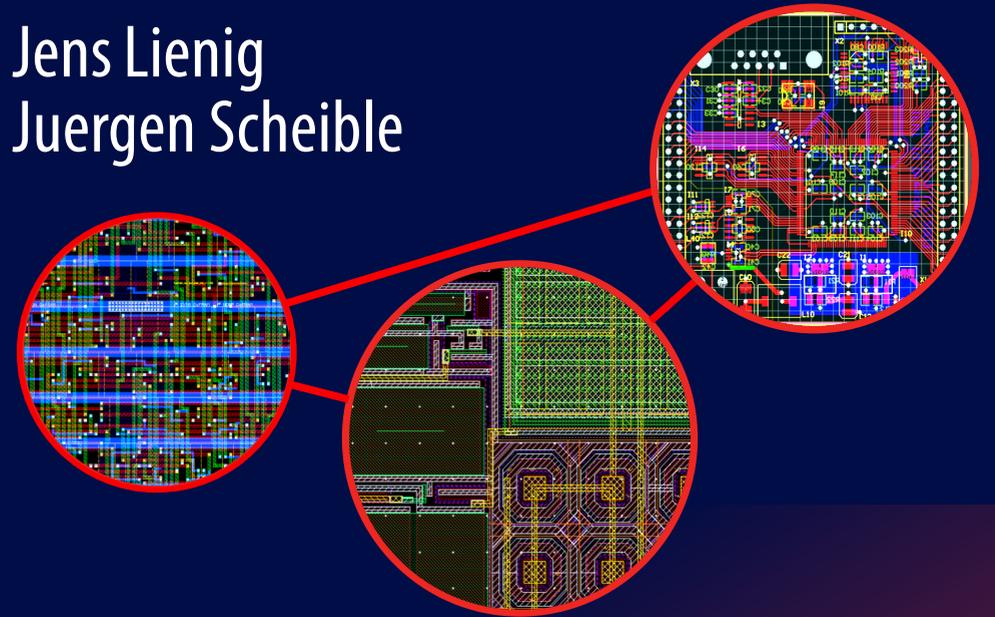
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