1. Record Nr. UNINA9910350298303321 Autore Lau John H. Titolo Heterogeneous integrations / / by John H. Lau Singapore:,: Springer Singapore:,: Imprint: Springer,, [2019] Pubbl/distr/stampa **ISBN** 981-13-7224-1 Edizione [1st ed. 2019.] Descrizione fisica 1 online resource (XXII, 368 p. 386 illus., 342 illus. in color.) 621.381 Disciplina Soggetti Integrated circuits Electronics Microelectronics Electronic circuits Electronics and Microelectronics, Instrumentation Circuits and Systems Electronic Circuits and Devices Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Chapter 1. Overview of 3D IC Heterogeneous Integrations -- Chapter 2. Nota di contenuto RDLs for Heterogeneous Integrations on Organic Substrates -- Chapter 3. RDLs for Heterogeneous Integration on Silicon (TSV-Interposers) --Chapter 4. RDLs for Heterogeneous Integration on Silicon (Bridges) --Chapter 5. RDLs for Heterogeneous Integration on Fan-Out Substrates -- Chapter 6. 3D IC Heterogeneous Integration in Memory Stacking --Chapter 7. 3D IC Heterogeneous Integration in PoP Formats -- Chapter 8. 3D IC Heterogeneous Integration in Chip-to-Chip Formats --Chapter 9. 3D IC Heterogeneous Integration with LED and VCSEL --Chapter 10. Future Trends of 3D IC Heterogeneous Integrations. Sommario/riassunto Heterogeneous integration uses packaging technology to integrate dissimilar chips, LED, MEMS, VCSEL, etc. from different fabless houses and with different functions and wafer sizes into a single system or subsystem. How are these dissimilar chips and optical components supposed to talk to each other? The answer is redistribution layers (RDLs). This book addresses the fabrication of RDLs for heterogeneous integrations, and especially focuses on RDLs on: A) organic substrates,

B) silicon substrates (through-silicon via (TSV)-interposers), C) silicon

substrates (bridges), D) fan-out substrates, and E) ASIC, memory, LED, MEMS, and VCSEL systems. The book offers a valuable asset for researchers, engineers, and graduate students in the fields of semiconductor packaging, materials sciences, mechanical engineering, electronic engineering, telecommunications, networking, etc.