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Titolo	Hybrid Quantum Systems / / edited by Yoshiro Hirayama, Koji Ishibashi, Kae Nemoto
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Descrizione fisica	1 online resource (352 pages)
Collana	Quantum Science and Technology, , 2364-9062
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Nota di contenuto	Quantum hybrid sensor by NV centers in diamond -- Magnetic Field Sensing using Nitrogen-Vacancy Centers in Diamond -- Wide-field imaging using ensembles of NV centers in diamond -- Collective behaviour in hybrid quantum systems -- Rare earth “non-spin-bath” crystals for hybrid quantum coupling -- Electron spin resonances detected by superconducting circuits -- Quantum information and technologies with spin-based hybrid systems -- Spins in silicon field-effect transistors -- Ge/Si core-shell nanowires for hybrid quantum systems -- Photonic quantum interfaces among different physical systems -- Hybrid quantum system of photons and nuclear spins of fermionic neutral atoms in a tunable optical lattice -- Phonon-electron-nuclear spin hybrid systems in an electromechanical resonator -- Cavity Quantum Electrodynamics with Laser-Cooled Atoms and Optical Nanofibers -- Robust quantum sensing -- Transferring quantum information in hybrid quantum systems consisting of a quantum system with limited control and aquantum computer.
Sommario/riassunto	This book presents state-of-the-art research on quantum

hybridization, manipulation, and measurement in the context of hybrid quantum systems. It covers a broad range of experimental and theoretical topics relevant to quantum hybridization, manipulation, and measurement technologies, including a magnetic field sensor based on spin qubits in diamond NV centers, coherently coupled superconductor qubits, novel coherent couplings between electron and nuclear spin, photons and phonons, and coherent coupling of atoms and photons. Each topic is concisely described by an expert at the forefront of the field, helping readers quickly catch up on the latest advances in fundamental sciences and technologies of hybrid quantum systems, while also providing an essential overview.