Record Nr. UNINA9910254602003321 Autore Francis-Jones Robert J.A **Titolo** Active Multiplexing of Spectrally Engineered Heralded Single Photons in an Integrated Fibre Architecture / / by Robert J.A. Francis-Jones Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2017 **ISBN** 3-319-64188-3 Edizione [1st ed. 2017.] Descrizione fisica 1 online resource (164 pages): illustrations Collana Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053 Disciplina 006.3843 Soggetti Quantum optics Lasers **Photonics** Optical materials Electronic materials **Quantum Optics** Optics, Lasers, Photonics, Optical Devices Optical and Electronic Materials Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references at the end of each chapters. Nota di contenuto Introduction -- Photon Pair Generation via Four-Wave Mixing in Photonic Crystal Fibres -- Numerical Modelling of Multiplexed Photon Pair Sources -- Design, Fabrication, and Characterisation of PCFs for Photon Pair Generation -- Construction of an Integrated Fibre Source of Heralded Single Photons -- Characterisation of a Multiplexed Photon Pair Source -- Conclusion. This clearly written thesis discusses the development of a highly Sommario/riassunto innovative single-photon source that uses active optical switching, known as multiplexing, to increase the probability of delivering photons into a single mode. Improving single-photon sources is critical in advancing the state of the art in photonic quantum technologies for information processing and communications.