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Titolo	Challenges for the chemical sciences in the 21st century [[electronic resource]] : health and medicine / / Organizing Committee for the Workshop on Health and Medicine
Pubbl/distr/stampa	Washington, D.C., : National Academy Press, c2004
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Descrizione fisica	1 online resource (75 p.)
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Soggetti	Health Medicine
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
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Titolo	Optical Soliton Communication Using Ultra-Short Pulses / / by Iraj Sadegh Amiri, Harith Ahmad
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ISBN	981-287-558-1
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (58 p.)
Collana	SpringerBriefs in Applied Sciences and Technology, , 2191-530X
Disciplina	621.3827
Soggetti	Microwaves Optical engineering Electrical engineering Lasers Photonics Applied mathematics Engineering mathematics Microwaves, RF and Optical Engineering Communications Engineering, Networks Optics, Lasers, Photonics, Optical Devices Mathematical and Computational Engineering
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Optical soliton signals propagating in fiber waveguides -- MRR systems and soliton communications -- Solitonic signals generation and transmission using MRR -- Ultra-Short Solitonic Pulses Used in Optical communication.
Sommario/riassunto	This brief analyzes the characteristics of a microring resonator (MRR) to perform communication using ultra-short soliton pulses. The raising of nonlinear refractive indices, coupling coefficients and radius of the single microring resonator leads to decrease in input power and round trips wherein the bifurcation occurs. As a result, bifurcation or chaos behaviors are seen at lower input power of 44 W, where the nonlinear refractive index is $n_2=3.2 \times 10^{20} \text{ m}^2/\text{W}$. Using a decimal convertor system, these ultra-short signals can be converted into quantum

information. Results show that multi solitons with FWHM and FSR of 10 pm and 600 pm can be generated respectively. The multi optical soliton with FWHM and FSR of 325 pm and 880 nm can be incorporated with a time division multiple access (TDMA) system wherein the transportation of quantum information is performed.
