1. Record Nr. UNINA9910483857803321

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| Titolo | Handbook of epoxy blends / / Jyotishkumar Parameswaranpillai [and three others] editors |
| Pubbl/distr/stampa | Cham, Switzerland : , : Springer, , [2017]<br>©2017 |
| ISBN | 3-319-40043-6 |
| Edizione | [1st ed. 2017.] |
| Descrizione fisica | 1 online resource (558 illus., 164 illus. in color. eReference.) |
| Disciplina | 547.412 |
| Soggetti | Epoxy compounds |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Part I Epoxy/Rubber Blends -- Introduction to Rubber epoxy polymers -- Novel techniques for the preparation of different rubber (CTBN, ATBN, ENR, HNR, liquid rubbers)/epoxy blends -- Miscibility and phase separation of epoxy/rubber blends -- Part II Epoxy/Thermoplastic Blends -- Introduction to epoxy/thermoplastic blends -- Part III Epoxy/Block-Copolymer Blends -- Introduction to epoxy/block-copolymer blends. |
| Sommario/riassunto | This reference work compiles and summarizes the available information on epoxy blends. It covers all essential areas – the synthesis, processing, characterization and applications of epoxy blends – in a comprehensive manner. The handbook is highly application-oriented and thus serves as a valuable, authoritative reference guide for researchers, engineers, and technologists working on epoxy blends, but also for graduate and postgraduate students, polymer chemists, and faculties at universities and colleges.The handbook is divided into three parts and organized by the types of blends and components: Part I covers epoxy rubber blends, Part II focuses on epoxy thermoplastic blends, and Part III examines epoxy block-copolymer blends. Each part starts with an introduction, and the individual chapters provide readers with comprehensive information on the synthesis and processing, analysis and characterization, properties and applications of the different epoxy blends. All parts conclude with a critical evaluation of the applications, weighing their advantages and drawbacks. Leading |

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| | international experts from corporate and academic research institutions and universities discuss the correlations of different epoxy blend properties with their macro-, micro- and nanostructures. This handbook thus offers a rich resource for newcomers to the field, and a major reference work for experienced researchers, the first of its kind available on the market. As epoxies find extremely broad applications, e.g. in oil & gas, in the chemical industry, building and construction industry, automotive, aviation and aerospace, boat building and marine applications, in adhesives and coatings, and many more, this handbook addresses researchers and practitioners from all these fields. |

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| 2. | Record Nr. | UNINA9910829849603321 |
| | Autore | Rumelhard Christian |
| | Titolo | Microwave photonic links [[electronic resource] ] : components and circuits / / Christian Rumelhard, Catherine Algani, Anne-Laure Billabert |
| | Pubbl/distr/stampa | London, : ISTE<br>Hoboken, N.J., : J. Wiley, 2011 |
| | ISBN | 1-118-58637-9<br>1-118-58635-2<br>1-299-27738-1<br>1-118-58631-X |
| | Edizione | [1st edition] |
| | Descrizione fisica | 1 online resource (420 p.) |
| | Collana | ISTE |
| | Altri autori (Persone) | AlganiCatherine<br>BillabertAnne-Laure |
| | Disciplina | 621.3813 |
| | Soggetti | Optical communications - Equipment and supplies<br>Microwave communication systems - Equipment and supplies<br>Telecommunication - Switching systems |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Note generali | Adapted and updated from Composants et circuits pour liaisons photoniques en micro-ondes published 2010 in France by Hermes Science/Lavoisier. |
| | Nota di bibliografia | Includes bibliographical references (p. [367]-391) and index. |
| | Nota di contenuto | Cover; Microwave Photonic Links; Title Page; Copyright Page; Table of Contents; Preface; Abbrevation Glossary; Chapter 1 General Points; 1.1. |

Microwave photonic links; 1.2. Link description; 1.3. Signal to transmit; 1.3.1. Microwave signal; 1.3.2. Microwave carrier for a digital signal; 1.3.3. UWB signal; 1.3.4. Optical carrier; 1.3.5. Summary; 1.4. Limitations of microwave photonic links; 1.4.1. Limitations due to the materials constituting the different elements; 1.4.2. Noise sources in microwave photonic links; 1.4.3. Nonlinearities
1.5. The components and characteristics of microwave photonic linksChapter 2 Generation and Modulation of Light; 2.1. Laser; 2.1.1. General points; 2.1.2. Semiconductor laser structure and optical gain in the active zone; 2.1.3. Operation of a Fabry-Perot laser; 2.1.4. Optical confinement factor and rate equations; 2.1.5. Static mode of laser operation (or CW mode of operation); 2.1.6. Dynamic mode of laser operation: RF small signal response; 2.1.7. RIN laser noise; 2.1.8. Increase in 1/f of RIN and superposition of a small signal and noise; 2.1.9. Different laser configurations
2.1.10. CAD laser models2.1.11. Laser measurements and temperature stabilization; 2.2. Electro-optic modulator: EOM; 2.2.1. General physical principles; 2.2.2. Pockels or linear electro-optical effect; 2.2.3. Mach-Zehnder electro-optic modulator; 2.2.4. Single-Drive MZM: one driving electrode; 2.2.5. Dual-drive MZM: two driving electrodes; 2.2.6. Real Mach-Zehnder modulator: characteristics and performances; 2.2.7. Mach-Zehnder modulator technology; 2.3. Electro-absorption modulator: EAM; 2.3.1. Electro-absorption effect; 2.3.2. FKE; 2.3.3. Stark effect; 2.3.4. Quantum well structures
2.3.5. MEA operation2.3.6. Characteristics of an EAM; 2.3.7. EML: EAM integrated to a DFB laser; 2.3.8. EAM electrical modeling for ultra-fast signal simulation; Chapter 3 Optical Fibers and Amplifiers; 3.1. Optical fibers; 3.1.1. General; 3.1.2. Material attenuation; 3.1.3. Material refraction index and dispersion; 3.1.4. Total reflection, numerical aperture, transmitted maximum frequency; 3.1.5. Step-index fiber; 3.1.6. Graded index fiber; 3.1.7. Single-mode fiber; 3.1.8. Plastic optical fibers; 3.2. Optical amplifiers; 3.2.1. Semiconductor optical amplifiers: SOA; 3.2.2. EDFAs
3.3. Appendix: modal analysis of propagation in a fiber3.3.1. Maxwell equations; 3.3.2. Maxwell equations in a cylindrical fiber; 3.3.3. Continuity and characteristic equation conditions; 3.3.4. Research of different propagation modes; 3.3.5. Approximation of linearly polarized modes; Chapter 4 Photodetectors; 4.1. Photodetector definition; 4.2. Photodiodes; 4.2.1. Presentation; 4.2.2. Light absorption in a semiconductor; 4.2.3. p-i-n photodiode; 4.2.4. Metal-semiconductor-metal or MSM photodiode; 4.2.5. Equivalent circuits for p-i-n and MSM photodiodes; 4.2.6. Nonlinearities
4.2.7. UTC photodiodes

Sommario/riassunto

This book presents the electrical models for the different elements of a photonic microwave link like lasers, external modulators, optical fibers, photodiodes and phototransistors. The future trends of these components are also introduced: lasers to VCSEL, external modulators to electro-absorption modulators, glass optical fibers to plastic optical fibers, photodiodes to UTC photodiodes or phototransistors. It also describes an original methodology to evaluate the performance of a microwave photonic link, based on the developed elcetrical models, that can be easily incorporated in