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| Nota di contenuto | CVD of Nonmetals; Contents; 1 . Introduction; 1.1 Organization of the Book; 1.1.1 Scope of the Book; 1.1.2 Potential Audience; 1.1.3 Selection of Chapter Topics; 1.1.4 Chapter Organization; 1.1.4.1 Cross-References Between Chapters; 1.1.4.2 Where to Find a Topic; 1.2 Uses of Materials; 1.2.1 Electronic Applications; 1.2.1.1 Band Gap Classifications; 1.2.2 Optical Applications; 1.2.3 Structural Applications; 1.3 Comparison of Deposition Techniques; 1.3.1 Comparison of Chemical Vapor Deposition Sub-Techniques; 1.3.1.1 Organometallic Vapor Phase Epitaxy (OMVPE); 1.3.1.2 PlasmaCVD<br>1.3.1.3 PhotoCVD1.3.1.4 Pressure Modifications in CVD; 1.3.1.5 Spray Pyrolysis Modifications; 1.3.2 Comparison of Non-Chemical Vapor Deposition Technologies; 1.3.2.1 Molecular Beam Epitaxy (MBE); 1.3.2.2 Other Physical Vapor Deposition Techniques; 1.4 General Comments on CVD; 1.4.1 Reactor Types; 1.4.2 Important Reaction Locations in CVD Reactors; 1.5 Experimental Design; 1.5.1 System Configuration; 1.5.1.1 System Reactant Input; 1.5.1.2 Reaction Zones; 1.5.1.3 Reaction Co-Product Removal System; 1.5.2 Handling of Precursors; 1.5.3 Methods of Energy Input; 1.5.3.1 Thermal CVD |

1.5.3.2 Alternate Modes1.5.4 Vapor Analysis in CVD; 1.6 Reaction Kinetics in CVD; 1.6.1 General Comments; 1.6.2 Vapor Phase Reactions; 1.6.3 Vapor-Solid Phase Reactions; 1.6.4 Solid Phase Reactions; 1.6.5 Control of Reaction Location; 1.6.6 Rate-Determining Steps in CVD; 1.6.7 Temperature and Growth Rate Effects; 1.7 Thermodynamics in CVD; 1.8 General Comments on Precursors; 1.8.1 Design Considerations; 1.8.2 Structural Motifs; 1.8.3 Mechanistic Insights; 1.9 References; 2 . Superconducting Materials; 2.1 Introduction; 2.2 Overview of Superconductivity
2.2.1 Physical Properties of Superconductors2.2.2 Low Temperature Superconducting Materials; 2.2.2.1 Crystal Structures of LTS Materials; 2.2.3 High Temperature Superconducting Materials; 2.2.3.1 Crystal Structure of HTS Materials; 2.2.4 Applications of Superconductors; 2.2.4.1 Large-Scale Applications of Superconducting Magnets; 2.2.4.2 Low-Field Applications of Superconductors; 2.2.4.3 Superconducting Electronics Applications; 2.3 CVD of LTS Materials; 2.3.1 Nb3Sn CVD Film Growth; 2.3.1.1 Nb3Sn CVD Precursors and Reaction Schemes; 2.3.1.2 Nb3Sn CVD Reactor Design
2.3.1.3 Substrates for Nb3Sn CVD2.3.1.4 Physical Properties of CVD-Derived Nb3Sn Films; 2.3.2 Nb3Ge CVD Film Growth; 2.3.2.1 Nb3Ge CVD Precursors and Reaction Schemes; 2.3.2.2 Nb3Ge CVD Reactor Design; 2.3.2.3 Physical Properties of CVD-Derived Nb3Ge Films; 2.3.2.4 Films Effects of Chemical Doping Upon Physical Properties of CVD-Derived Nb3Ge; 2.3.3 NbC1-y Ny CVD Film Growth; 2.3.3.1 NbC1-yNy CVD Precursors and Reaction Schemes; 2.3.3.2 Reactor Design for CVD of NbC1-y Ny on Carbon Fiber; 2.3.3.3 Physical Properties of CVD-Derived NbCI, Ny Films; 2.3.4 NbN CVD Film Growth 2.3.4.1 NbN CVD Precursors and Reaction Schemes

Sommario/riassunto

Written by leading experts in the field, this practical reference handbook offers an up-to-date, critical survey of the chemical vapor deposition (CVD) of nonmetals, a key technology in semiconductor electronics, finishing, and corrosion protection.The basics necessary for any CVD process are discussed in the introduction. In the following chapters, precursor requirements, with an emphasis on materials chemistry, common structures of reactants and substrates, as well as reaction control are discussed for a broad range of compositions including superconducting, conducting, semiconductin

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| Sommario/riassunto | This volume contains the scientific papers presented at the Conference on Comparative and International Law that was held on 25 June 2021 online on Zoom. This is an international conference. The conference is organized every year by the Society of Juridical and Administrative Sciences together with the Faculty of Law of the Bucharest University of Economic Studies. More information about the conference can be found on the official website: www.comparativelawconference.eu . The scientific studies included in this volume are grouped into two chapters: Inspirational analyzes in comparative law, Seeking the brilliance of international law. This volume is aimed at practitioners, researchers, students and PhD. candidates in juridical sciences, who are interested in recent developments and prospects for development in the field of comparative and international law. |