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Nota di contenuto	Intro -- Supervisor's Foreword -- Abstract -- Acknowledgments -- Contents -- Symbols, Physical Constants and Acronyms -- Symbols -- Physical Constants -- Acronyms -- 1 Introduction -- 1.1 Detection of Electromagnetic Radiation: A Growing Demand -- 1.2 Challenges of the Current Technology -- 1.3 Organic Electronics and Organic Photodetectors -- 1.4 Challenges for OPDs -- 1.5 Outline of This Thesis -- References -- 2 Fundamentals of Light Detection -- 2.1 Radiometry -- 2.1.1 Radiometric Quantities -- 2.1.2 Black-Body Radiation -- 2.2 Inorganic Light Detecting Devices -- 2.2.1 Fundamentals of Inorganic Semiconductor Physics -- 2.2.2 From Radiation to Chemical Energy -- 2.2.3 From Chemical Energy to Electrical Energy -- 2.2.4 Interfaces Metal/Semiconductor -- 2.2.5 pn-Junction -- 2.2.6 Photoconductors for Light Detection -- 2.3 Figures of Merit of Photodetectors -- 2.3.1 Power Spectral Density $S_x(f)$ -- 2.3.2 Noise Current $I_{n,angle}$ -- 2.3.3 Responsivity R -- 2.3.4 Noise Equivalent Power NEP -- 2.3.5 Specific Detectivity D^* -- 2.3.6 BLIP Limit for D^* -- 2.3.7 Dynamic Range -- 2.3.8 Response Speed -- References -- 3 Organic Semiconductors for Light Detection -- 3.1 Organic Semiconductors -- 3.1.1 Molecular Properties -- 3.1.2 Solid State Physics of Organic Semiconductors -- 3.1.3 Traps in Organic Solids -- 3.2 Working Principle of Optoelectronic Devices -- 3.2.1 Donor-Acceptor Systems and Charge-Transfer States -- 3.2.2 Impact

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