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| Altri autori (Persone) | KhanhTran Quoc |
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| Nota di contenuto | Illumination, Color and Imaging: Evaluation and Optimization of Visual Displays; Contents; Series Editor's Foreword; Preface; About the Authors; 1 Color Vision and Self-Luminous Visual Technologies; 1.1 Color Vision Features and the Optimization of Modern Self-Luminous Visual Technologies; 1.1.1 From Photoreceptor Structure to Colorimetry; 1.1.2 Spatial and Temporal Contrast Sensitivity; 1.1.3 Color Appearance Perception; 1.1.4 Color Difference Perception; 1.1.5 Cognitive, Preferred, Harmonic, and Emotional Color; 1.1.6 Interindividual Variability of Color Vision<br>1.2 Color Vision-Related Technological Features of Modern Self-Luminous (Nonprinting) Visual Technologies1.3 Perceptual, Cognitive, and Emotional Features of the Visual System and the Corresponding Technological Challenge; References; 2 Colorimetric and Color Appearance-Based Characterization of Displays; 2.1 Characterization Models and Visual Artifacts in General; 2.1.1 Tone Curve Models and Phosphor Matrices; 2.1.2 Measured Color Characteristics, sRGB, and |

Other Characterization Models; 2.1.3 Additivity and Independence of the Color Channels
2.1.4 Multidimensional Phosphor Matrices and Other Methods2.1.5 Spatial Uniformity and Spatial Independence; 2.1.6 Viewing Direction Uniformity; 2.1.7 Other Visual Artifacts; 2.1.8 The Viewing Environment: Viewing Conditions and Modes; 2.1.9 Application of CIELAB, CIELUV, and CIECAM02 to Self-Luminous Displays; 2.2 Characterization Models and Visual Artifacts of the Different Display Technologies; 2.2.1 Modern Applications of the Different Display Technologies; 2.2.2 Special Characterization Models of the Different Displays; 2.2.2.1 CRT; 2.2.2.2 PDP
2.2.2.3 Various LCD Technologies and Their Viewing Direction Uniformity2.2.2.4 Head-Mounted Displays and Head-Up Displays; 2.2.2.5 Projectors Including DMD and LCD; 2.2.2.6 OLEDs; 2.3 Display Light Source Technologies; 2.3.1 Projector Light Sources; 2.3.2 Backlight Sources; 2.3.3 Color Filters, Local Dimming, and High Dynamic Range Imaging; 2.4 Color Appearance of Large Viewing Angle Displays; 2.4.1 Color Appearance Differences between Small and Large Color Stimuli; 2.4.1.1 Color Appearance of an Immersive Color Stimulus on a PDP
2.4.1.2 Xiao et al.'s Experiment on the Appearance of a Self-Luminous 50° Color Stimulus on an LCD2.4.2 Mathematical Modeling of the Color Size Effect; References; 3 Ergonomic, Memory-Based, and Preference-Based Enhancement of Color Displays; 3.1 Ergonomic Guidelines for Displays; 3.2 Objectives of Color Image Reproduction; 3.3 Ergonomic Design of Color Displays: Optimal Use of Chromaticity Contrast; 3.3.1 Principles of Ergonomic Color Design; 3.3.2 Legibility, Conspicuity, and Visual Search; 3.3.3 Chromaticity Contrast for Optimal Search Performance
3.3.4 Chromaticity and Luminance Contrast Preference

Sommario/riassunto

This much needed, comprehensive and modern reference on display technology, illumination sources and color imaging focuses on visual effects and how reproduced images are best matched to human visual features.As such, it teaches readers how to exploit the knowledge of human color information processing to design usable, ergonomic, and pleasing displays or visual environments. The contents describe design principles and methods to optimize self-luminous visual technologies for the human user, including modern still and motion image displays, and indoor light sources. Design principles and m