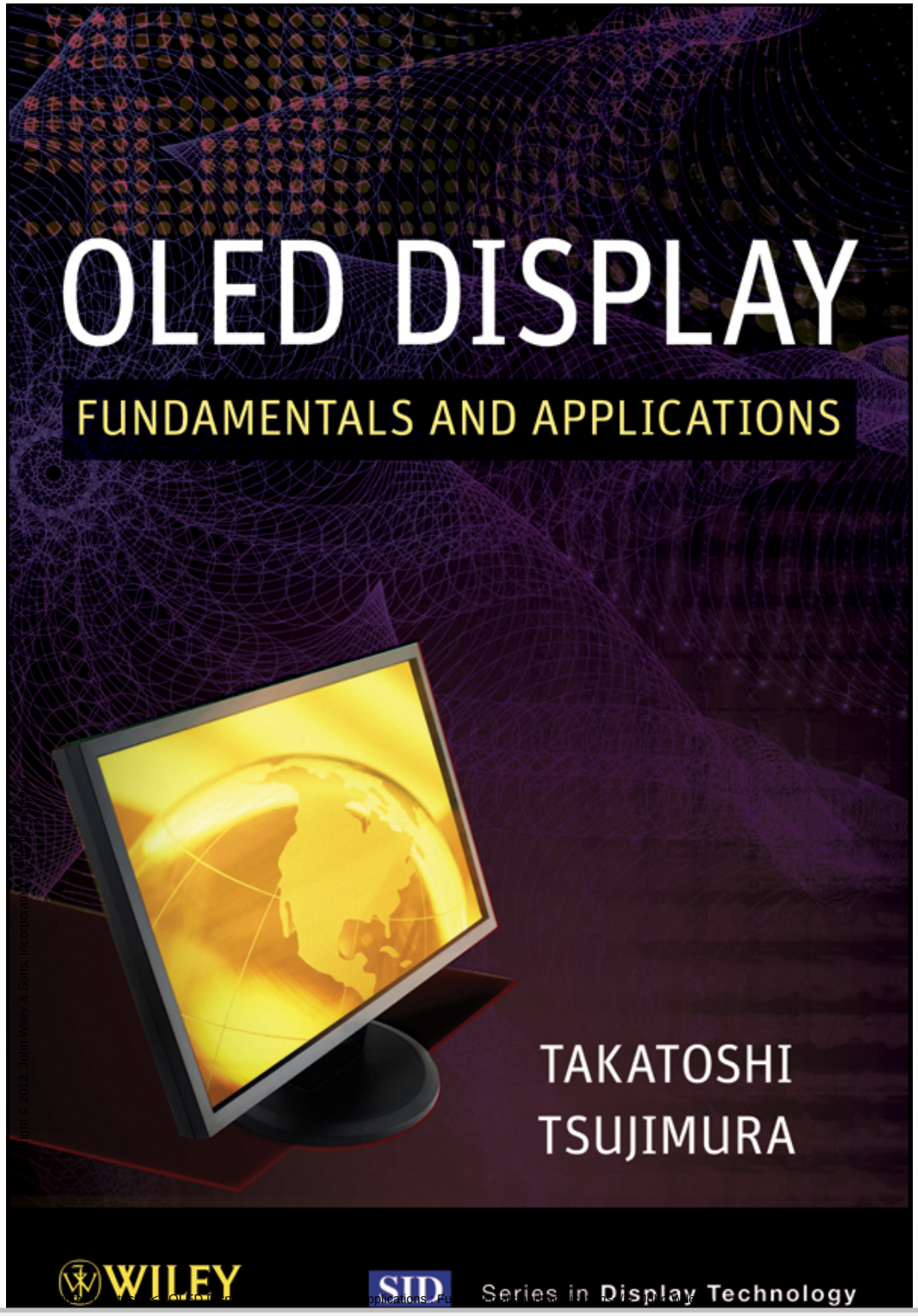

OLED Displays
Fundamentals and Applications

Wiley-SID Series in Display Technology

Series Editor:
Anthony C. Lowe

A complete list of the titles in this series appears at the end of this volume.

4

4 OLED Display Module

4.1 COMPARISON BETWEEN OLED AND LCD MODULES

Figure 4.1 compares the components that are necessary for production of liquid crystal display (LCD) and OLED display modules.

An LCD consists of many components because it must convert backlight emission to uniform area emission and switch on and off the light with a liquid crystal shutter, which is positioned between two polarizers.

A typical LCD uses a cold-cathode fluorescent tube (CCFL) or multiple LEDs. Two types of LED are used: (1) that which emits short wavelength emission, which is converted to longer wavelengths by means of a fluorescent material (downconversion) and (2) that which emits the three color primaries (red–green–blue [RGB]). Thus the light source for an LCD is either linear (fluorescent tube) or point, so the light must be converted to the area form to be used as a backlight unit. The light reflected by the reflector passes through the light guide and is diffused. A light guide is made of high refractive index material, such as an acrylic polymer, which delivers the light by total internal reflection due to the refractive index difference between it and the surrounding air. The light guide structure is designed such that uniform luminance distribution across the area of the display can be achieved. Light exiting from the light guide is transmitted through the prism sheet and diffuser, and is then polarized by the rear polarizer. Polarization of the light is changed by the field-induced orientation of

OLED Displays: Fundamentals and Applications, First Edition. Takatoshi Tsujimura.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.