Aggregation-Induced Emission (AIE) is a novel photophysical phenomenon which offers a new platform for researchers to look into the light-emitting processes from luminogen aggregates, from which useful information on structure–property relationships may be collected and mechanistic insights may be gained. The discovery of the AIE effect opens a new avenue for the development of new luminogen materials in the aggregate or solid state. By enabling light emission in the practically useful solid state, AIE has the potential to significantly expand the technological applications of luminescent materials.

Aggregation-Induced Emission: Applications is the first book to explore the high-tech applications of AIE luminogens, including technological utilizations of AIE materials in the areas of electroluminescence, mechanochromism, chiral recognition, ionic sensing, biomolecule detection, and cell imaging. Potential applications in room temperature phosphorescence, liquid crystals, circularly polarized luminescence, and organic lasing are also introduced in this volume.

Topics covered include:

- AIE materials for electroluminescence applications
- Liquid crystals with AIE characteristics
Mechanochromic AIE materials

Chiral recognition and enantiomeric differentiation based on AIE

AIE and applications of aryl-substituted pyrrole derivatives

New chemo-/biosensors with AIE-active molecules

AIE luminogens for in vivo functional bioimaging

Applications of AIE materials in biotechnology

This book is essential reading for scientists and engineers who are designing optoelectronic materials and biomedical sensors, and will also be of interest to academic researchers in materials science, physical and synthetic organic chemistry as well as physicists and biological chemists.

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