

1. Record Nr.	UNINA9910410046603321
Autore	Jin Mingoo
Titolo	Novel Luminescent Crystalline Materials of Gold(I) Complexes with Stimuli-Responsive Properties // by Mingoo Jin
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-4063-2
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (200 pages)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	541.35
Soggetti	Organometallic chemistry Optical materials Electronic materials Physical chemistry Inorganic chemistry Organometallic Chemistry Optical and Electronic Materials Physical Chemistry Inorganic Chemistry Luminescència Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. General Introduction -- 2. Introduction of a Biphenyl Moiety for a Solvent Responsive Aryl Gold(I) -- 3. Luminescent Mechanochromism of a Chiral Complex: Distinct Crystal Structures and Color Changes of Racemic and Homochiral Gold(I) Isocyanide Complexes with a Binaphthyl Moiety -- 4. Mechano-Responsive Luminescence via Crystal-to-Crystal Phase Transitions between Chiral and Non-Chiral Space Groups -- 5. Mechanical-Stimulation-Triggered and Solvent-Vapor-Induced Reverse Single-Crystal-to-Single-Crystal Phase Transitions with Alterations of the Luminescence Color -- 6. Thermo-Responsive Phosphorescence Control Mediated by Molecular Rotation and Auophilic Interactions in Amphidynamic Crystals of Phosphane-Gold(I) Complex -- 7. Conclusion.

Sommario/riassunto

This book highlights and investigates novel solid-state luminescent properties of crystals with stimuli-responsive behavior. Several novel molecular designs for controlling crystal structures with photo-physical properties are described, with a special focus on external stimuli-responsive properties. The major goal of the material design concept was to capitalize on the chirality of crystals with stimuli-responsive properties. To allow crystals' chirality to be controlled and modified by means of external stimulation, the axial chirality of biaryl moiety was employed and, interestingly, produced several novel mechano- and vapo-responsive luminescent properties based on crystal-to-crystal or single-crystal-to-single-crystal phase transitions. In addition, the book details how the molecular rotation of luminophores in the solid phase can be used to achieve corresponding thermal-responsive phosphorescence. The reports presented here illustrate how the author has succeeded in controlling structural factors in a bulk environment by using molecular design with linking to photo-physical properties. The content will be of great interest to researchers in the field, and to members of chemical and material science societies. .
