

Contents

1	Organometallic Versus Organic Molecules for Energy Conversion in Organic Light-Emitting Diodes and Solar Cells	1
	Cheuk-Lam Ho and Wai-Yeung Wong	
2	Density Functional Theory in the Design of Organometallics for Energy Conversion	29
	Gemma R. Freeman and J.A. Gareth Williams	
3	First-Row Transition Metal Complexes for the Conversion of Light into Electricity and Electricity into Light	61
	Etienne Baranoff	
4	Ruthenium-Based Photosensitizers for Dye-Sensitized Solar Cells	91
	Jian He, Baohua Wang, Shuai Chang, and Tao Chen	
5	All-Polymer Solar Cells Based on Organometallic Polymers	115
	Tsuyoshi Michinobu	
6	Transition-Metal Complexes for Triplet–Triplet Annihilation-Based Energy Upconversion	137
	Xinglin Zhang, Tianshe Yang, Shujuan Liu, Qiang Zhao, and Wei Huang	
7	Visible Light-Harvesting Transition Metal Complexes for Triplet–Triplet Annihilation Upconversion	171
	Poulomi Majumdar and Jianzhang Zhao	
8	Triarylboron-Functionalized Metal Complexes for OLEDs	207
	Zachary M. Hudson, Xiang Wang, and Suning Wang	
9	Organometallic Phosphors for OLEDs Lighting	241
	Di Liu	

10	White Organic Light-Emitting Diodes Based on Organometallic Phosphors	285
	Dongcheng Chen and Shi-Jian Su	
11	Kinetics and Mechanisms of Reduction of Protons and Carbon Dioxide Catalyzed by Metal Complexes and Nanoparticles	313
	Shunichi Fukuzumi, Tomoyoshi Suenobu, and Yusuke Yamada	
12	Molecular Catalysts and Organometallics for Water Oxidation . . .	347
	Khurram Saleem Joya	
13	Recent Development in Water Oxidation Catalysts Based on Manganese and Cobalt Complexes	365
	Lawrence Yoon Suk Lee and Kwok-Yin Wong	
14	Hydrogen Activation in Water by Organometallic Complexes . . .	395
	Luca Gonsalvi, Federica Bertini, Antonella Guerriero, and Irene Mellone	
15	Metal-Organic Frameworks as Platforms for Hydrogen Generation from Chemical Hydrides	421
	Yanying Zhao and Qiang Xu	
16	Organometallics for Hydrogen Storage Applications	469
	Torsten Beweries	
17	Hybrid Systems Consisting of Redox-Active π-Conjugated Polymers and Transition Metals or Nanoparticles	497
	Toshiyuki Moriuchi, Toru Amaya, and Toshikazu Hirao	
18	Photochemical Solar Energy Conversion and Storage Using Cyclometalated Iridium Complexes	513
	Zhen-Tao Yu	

Organometallics and Related Molecules for Energy
Conversion

Wong, W.-Y. (Ed.)

2015, XIII, 537 p. 378 illus., 125 illus. in color.,
Hardcover

ISBN: 978-3-662-46053-5