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Nota di contenuto	Theory and Literature Survey: Biomimetic Light-Harvesting -- Controlling the Self-Assembly of Zinc Porphyrin P2 -- Conclusion: Biomimetic Light-Harvesting -- Theory and Literature Survey: Application of BLH to Solar Cells -- Construction of Solar Cells -- Results and Discussion: Application of BLH to Solar Cells -- Conclusion: Application of BLH to Solar Cells.
Sommario/riassunto	This thesis describes a new approach to the construction of solar cells. Following nature's example, this approach has the goal to find a biomimetic self-assembling dye, whose aggregates can mimic the natural light-harvesting system of special photosynthetic active bacteria. The thesis investigates methods to control the self-assembly such that suitable dye aggregates are formed with high internal order

and size-confinement.The dye aggregates can be implemented into a new type of solar cells, designed to combine the advantages of hybrid solar cells and solid-state dye-sensitized solar cells (ss-DSSCs): dye aggregate solar cells (DASCs). This book describes the construction and first tests of a prototype for DASCs on the basis of the investigated dye aggregates. The described approach has the advantage that it will enable to build up a light-harvesting system fully synthetically in large scale in order to realize low-cost, light-weight and environmentally friendly solar cells – a worthwhile goal towards the exploitation of clean energy from sunlight.