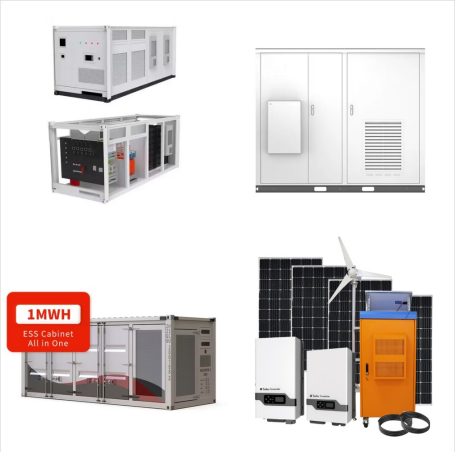
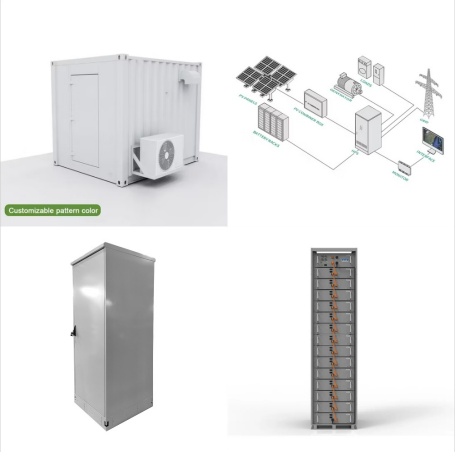
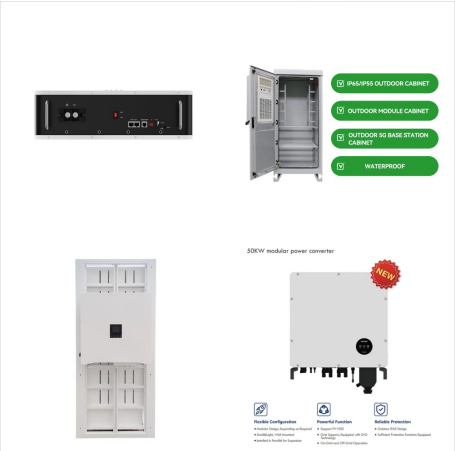


A solution-processable semiconducting polymer with remarkable film-forming and hole transport properties is synthesized to fabricate perovskite solar cells with ?? 1/4 25% efficiency. The exceptional mechanical properties endow the cells with excellent thermal durability at 85?C and operational stability.

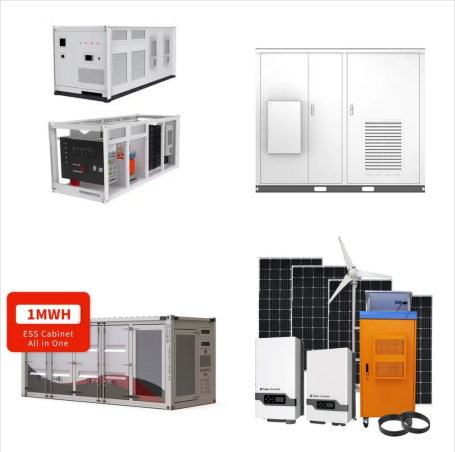


In this work, we aim to deliver a comprehensive review of the past and current fabrication and subsequent structural characterization of single crystals of established semiconducting polymers and oligomers while maintaining extra emphasis on the crystals" resulting optoelectronic properties, including charge carrier mobility, conductivity, photovoltaic ???

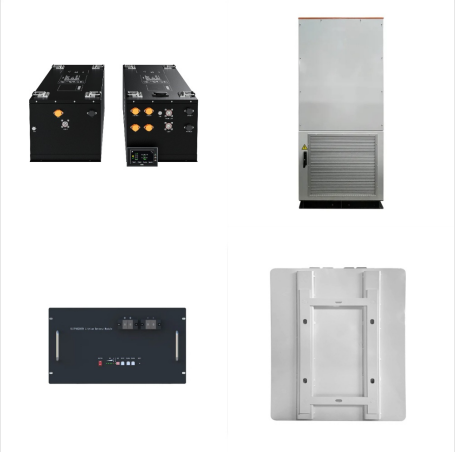


Over the past few decades, a tremendous amount of research has been performed in the area of organic semiconducting polymers regarding their potential applications in organic light-emitting diodes

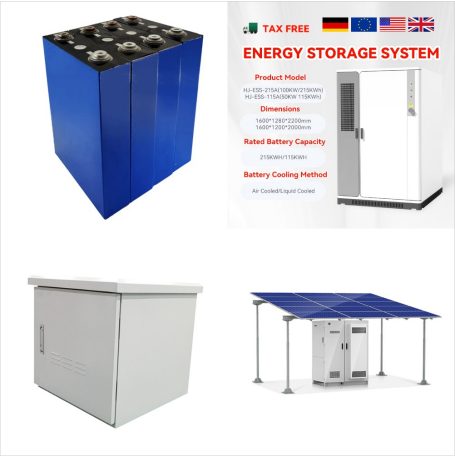
SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



Correction: Low bandgap semiconducting polymers for polymeric photovoltaics C. Liu, K. Wang, X. Gong and A. J. Heeger, Chem. Soc. Rev., 2016, 45, 4847 DOI: 10.1039/C5CS90128F This article is licensed under a Creative Commons Attribution 3.0 Unported Licence. You can use material from this article in other publications without requesting further ???

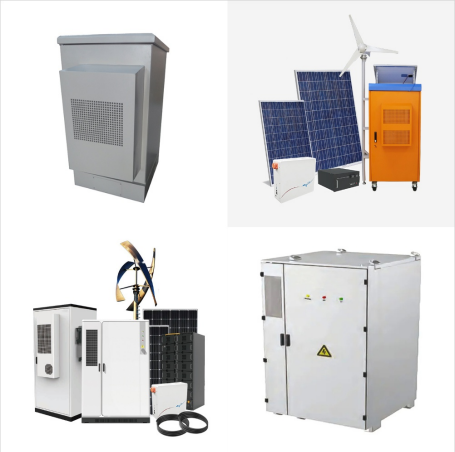


Organic photovoltaic cells made with semiconducting polymers remain one of the most promising technologies for low-cost solar energy due to their compatibility with roll-to-roll printing techniques. The development of new light-absorbing polymers has driven tremendous advances in the power conversion efficiency of these devices.

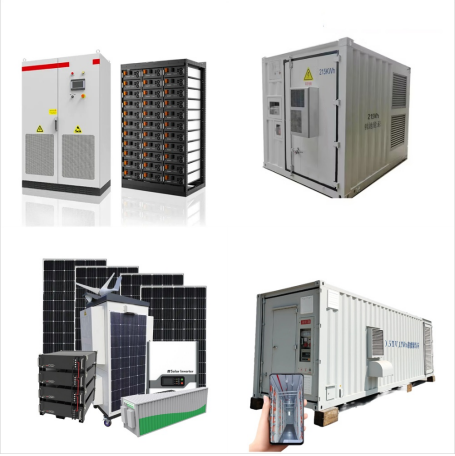


Conjugated semiconducting polymers are key active materials for printable electronics, sensors and biosensors, organic photovoltaics, organic light emitting devices, and more. The research in the field developed very efficient materials and sound structure property relationships, thus making a case for a transition from laboratory to industrial

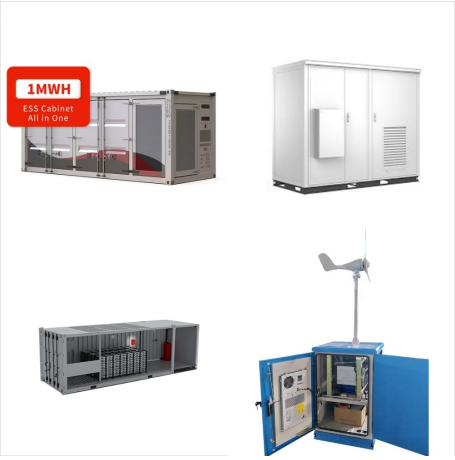
SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



The strategic design of solution-processable semiconducting polymers possessing both matched energy levels and elevated glass transition temperatures is of urgent importance in the progression of thermally robust n-i-p perovskite solar cells with efficiencies exceeding 25 %.

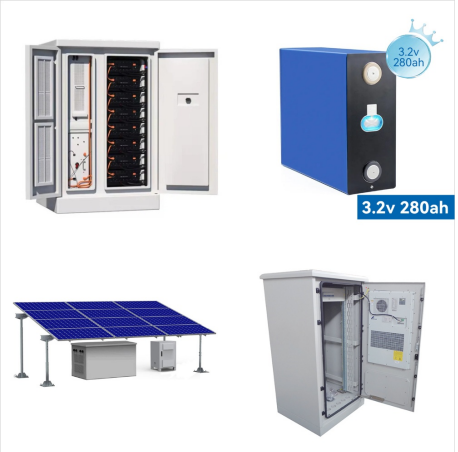


Mori H, Nonobe H, Nishihara Y. Highly crystalline, low band-gap semiconducting polymers based on phenanthrodithiophene-benzothiadiazole for solar cells and transistors. Polym Chem. 2016;7:1549???58.

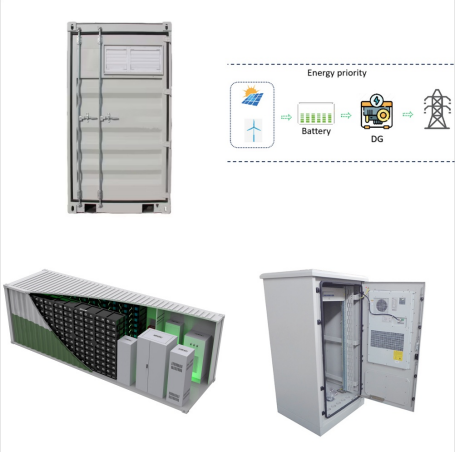


Chemical structures of two helicene-based semiconducting polymers and the reference copolymer, alongside state-of-the-art hole transport materials employed in perovskite solar cells For PSCs utilizing oxide electron transport layers such as TiO 2 or SnO 2, designing OSCs with sufficiently high HOMO energy levels is crucial to ensure efficient

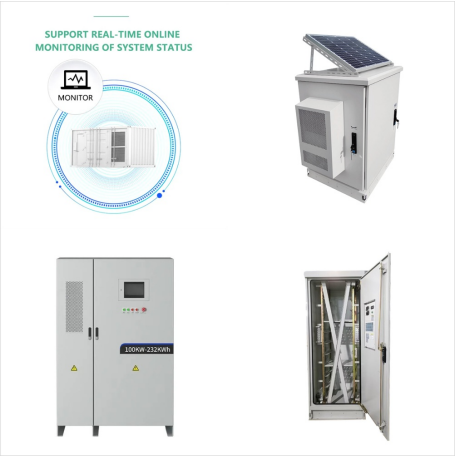
SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



Semiconducting materials have long played a pivotal role in the development and advancement of organic electronic applica-tions such as organic light-emitting diodes, organic ???eld-e???ect transistors, and organic solar cells.1???4 More recently, semi-conducting polymers have made their entry into the new ???eld

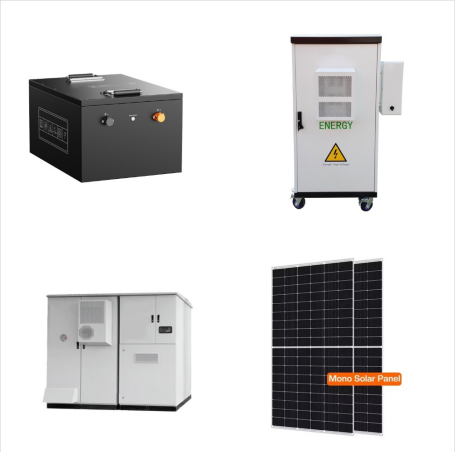


Till now, the efficiencies of organic/polymer solar cells have steadily developed from 1% to over 17% [11]. 6.1.3.1. In the postpolymerization mini-emulsion method semiconducting polymers are dissolved into an organic solvent (oil phase) normally immiscible with water. Then the solution is added to an aqueous surfactant solution.

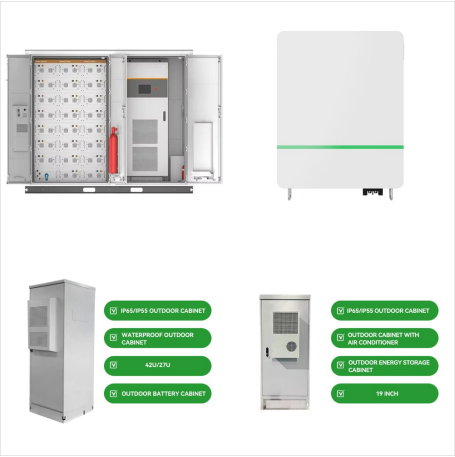


Editorial: Molecular Design and Morphology Control of Semiconducting Polymers for High-Performance Transistors and Photovoltaics Mengmeng Li1,2*, Haijun Bin3 and Tomasz Marszalek4 1Key Laboratory of Microelectronic Devices and Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China, 2University of Chinese ???

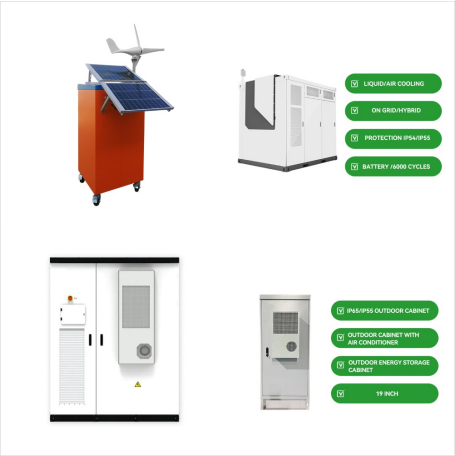
SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



The feasibility of using strongly electron-deficient naphthobispyrazine bisimide (NPI) as a building unit for n-type semiconducting polymers used in all-polymer organic photovoltaics (OPV) cells

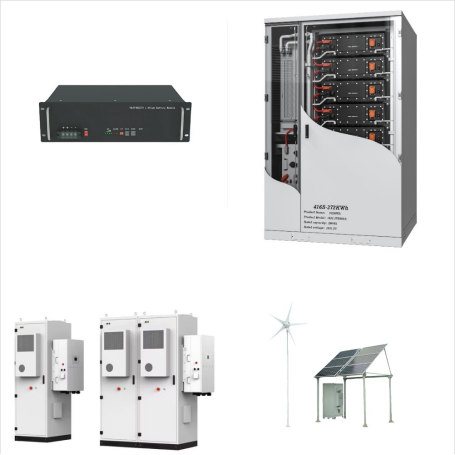


Organic semiconducting materials have been become the cornerstone of organic electronics, including photovoltaic cells, light-emitting diodes, field effect transistors, and electrochromic devices. The synthesis of new organic semiconducting materials and the development of new synthetic methods for preparing semiconducting organic materials are

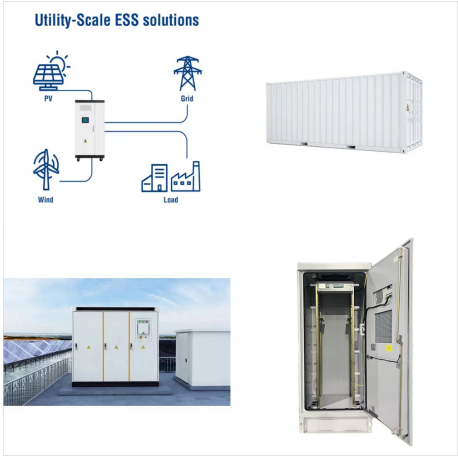


We have also begun the manufacture of electron-deficient semiconducting polymers that may prove to be excellent acceptors in bulk hetero-junction OPVs. This paper presents a summary of the materials characterization conducted on TDA's new electronic materials and how these may address several of the pressing issues preventing the realization of

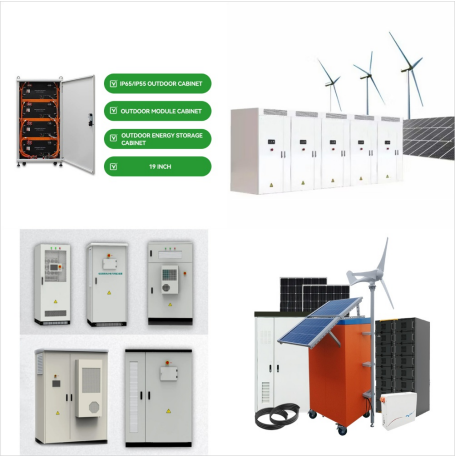
SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



Strategic design and synthesis of semiconducting polymers with intrinsic ductility and/or stretchability are introduced in this review. The best polymer films show high charge mobilities over 1

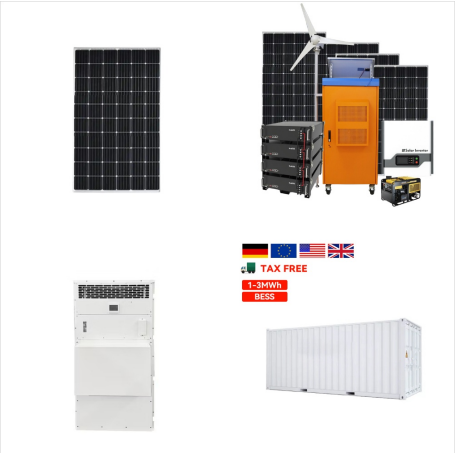


Mori H, Nonobe H, Nishihara Y. Highly crystalline, low band-gap semiconducting polymers based on phenanthrodithiophene-benzothiadiazole for solar cells and transistors. Polym Chem. 2016;7:1549???58.

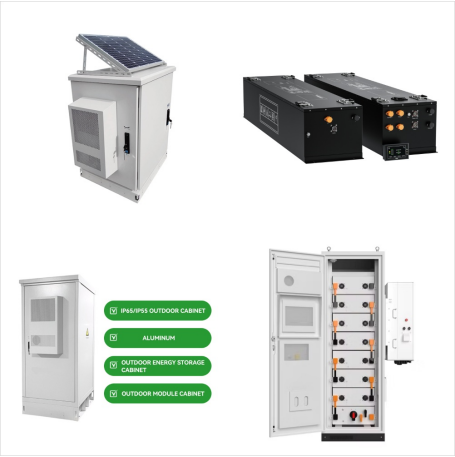


DOI: 10.1039/C5CS90128F Corpus ID: 40995158; Correction: Low bandgap semiconducting polymers for polymeric photovoltaics. @article{Liu2016CorrectionLB, title={Correction: Low bandgap semiconducting polymers for polymeric photovoltaics.}, author={Chang Liu and Kai Wang and Xiong Gong and Alan J. Heeger}, journal={Chemical ???

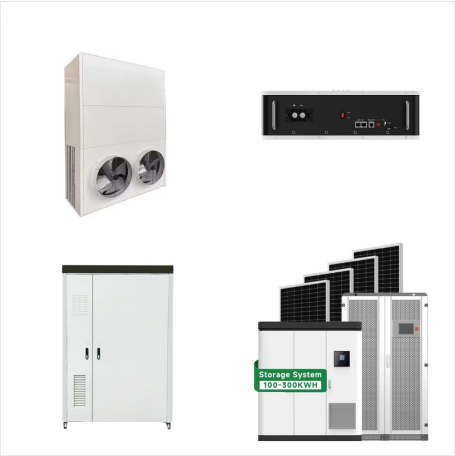
SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



Semiconducting Polymers OPV Polymers OFET and OLED Polymers Interface Polymers Luminosyn??? Polymers Perovskite Materials Perovskite Gong, X., Lee, K. & Heeger, A. J. Thermally stable, efficient polymer solar cells with nanoscale control of the interpenetrating network morphology. Adv. Funct. Mater. 15, 1617???1622

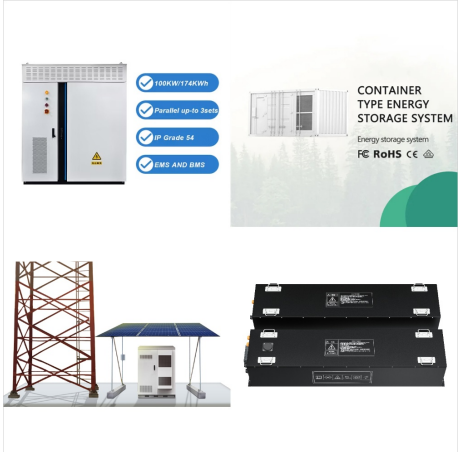


It has been demonstrated that LBG semiconducting polymers based on electron-donor units combined with strong electron-withdrawing units possess excellent electronic and optic properties, emerging as excellent candidates for efficient PSCs. In order to develop high performance polymer solar cells (PSCs), full exploitation of the sun-irradiation from ultraviolet ???



Naphthobispyrazine bisimide-based semiconducting polymers as electron acceptors for all-polymer photovoltaic cells X. et al. High efficiency polymer solar cells based on poly(3-hexylthiophene

SEMICONDUCTING POLYMERS FOR PHOTOVOLTAICS



Bulk heterojunction type polymer solar cells based on PDTP-DTDPP(Bu) and PC 70 BM have broad photocurrent response wavelength range from 300 nm to 1.1 ? 1/4 m. High short-circuit current (14.87 mA/cm 2) and power conversion efficiency (2.71%) were achieved, which is a significant advance for efficient photovoltaic polymers that respond to the