

聚合物及有机半导体太阳能电池 研究领域分析报告

2011年4月20日

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一、Web of Science 数据来源、检索年限及检索策略

Web of Science（全球获取学术信息的重要数据库）中的

1、Science Citation Index Expanded（SCIE，科学引文索引）

检索年限：1899-至今

2、Conference Proceedings Citation Index- Science（CPCI-S，会议论文集引文索引）

检索年限：1990-至今

3、主题="Organic solar cell*" or "Polymer Solar Cell*" or "polymer photovoltaic*" or "Organic photovoltaic*" or "polymer-based organic solar cell*" or "polymer photovoltaic material*" or "Polymer-fullerene composite solar cell*"

二、基于 Web of Science 数据库的趋势分析

1、论文产出与增长趋势

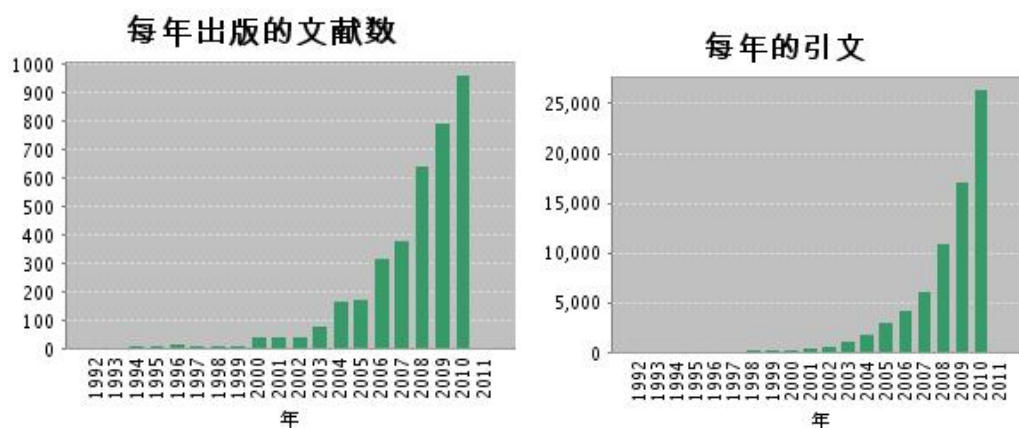
共发表论文 3832 篇，其中中国发表论文在该领域中共发表论文 520 篇，可以清晰的看到国际和中国发表论文的发展趋势。

聚合物及有机半导体太阳能电池研究的科技论文产出数量

Publication Year	International Record Count	China Record Count
1974		1
1976		1
1978		2
1979		1
1980		1
1981		3
1982		1
1983		1
1984		3
1986		3
1987		3
1988		3
1990		5

1991	13	
1992	11	
1993	7	
1994	13	
1995	13	
1996	20	
1997	14	
1998	14	
1999	16	1
2000	44	3
2001	46	5
2002	49	3
2003	82	10
2004	170	16
2005	180	16
2006	319	33
2007	381	62
2008	644	77
2009	799	117
2010	963	177
2011	6	

2、论文产出引文报告



论文总数	3,832
总被引频次	75,736
篇均引用次数	19.76

3、学科分布概况

聚合物及有机半导体太阳能电池前 10 个学科如下:

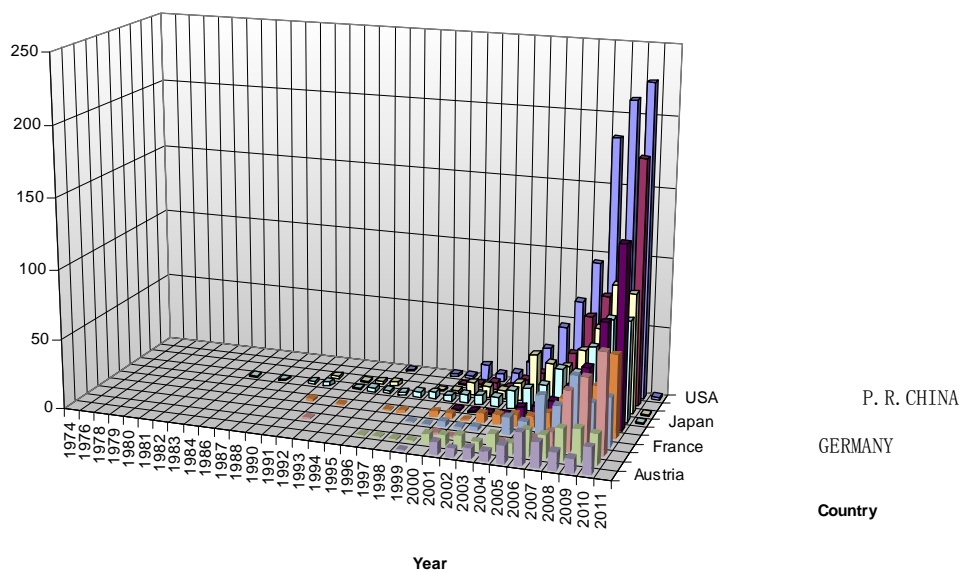
Subject Area	Record Count
MATERIALS SCIENCE, MULTIDISCIPLINARY	1657
PHYSICS,APPLIED	1270
CHEMISTRY,PHYSICAL	760
CHEMISTRY,MULTIDISCIPLINARY	651
PHYSICS,CONDENSED MATTER	608
NANOSCIENCE & NANOTECHNOLOGY	559
POLYMER SCIENCE	451
ENERGY & FUELS	445
OPTICS	239
MATERIALS SCIENCE, MULTIDISCIPLINARY	158

4、科研实力分析

前 10 个主要合作的国家和地区如下:

Country/Territory	Record Count
USA	957
PEOPLES R CHINA	520
GERMANY	433
JAPAN	380
SOUTH KOREA	315
ENGLAND	218
FRANCE	209
TAIWAN	198
NETHERLANDS	163
AUSTRIA	127

Number of Records by Country and Year



聚合物及有机半导体太阳能电池研究主要科研国家与地区
及其年代变化趋势

前 10 个主要合作的国际机构如下:

Institution Name	Record Count
CHINESE ACAD SCI	180
OSAKA UNIV	107
NATL TAIWAN UNIV	87
EINDHOVEN UNIV TECHNOL	77
UNIV CALIF LOS ANGELES	74
LINKOPING UNIV	71
NATL CHIAO TUNG UNIV	67
UNIV CAMBRIDGE	66
UNIV LONDON IMPERIAL COLL SCI TECHNOL & MED	64
NATL RENEWABLE ENERGY LAB	61

Organization Trends in Last 3 Years

Last 3 Years is: 2010 – 2008

Top Organizations in Last 3 Years

Chinese Acad Sci [102]
Natl Taiwan Univ [56]

Organizations First Published in Last 3 Years

Jaipur Engr Coll [14]
Pukyong Natl Univ [8]

Organizations No Longer Published in Last 3 Years

Johannes Kepler Univ [44]
Riso Natl Lab [34]

Natl Chiao Tung Univ [47]	Cent S Univ [8]	Chalmers Univ Technol [17]
Univ Calif Los Angeles [32]	Johannes Gutenberg Univ Mainz [8]	Univ Oldenburg [16]
Univ Calif Santa Barbara [31]	Univ Elect Sci & Technol China [7]	Norfolk State Univ [16]
Univ London Imperial Coll Sci Technol & Med [31]	Dankook Univ [7]	Limburgs Univ Ctr [11]
Seoul Natl Univ [31]	Stanford Synchrotron Radiat Lightsource [7]	Nippon Shokubai Co Ltd [10]
Tech Univ Denmark [30]	Japan Sci & Technol Agcy JST [7]	Forschungszentrum Julich [9]
Acad Sinica [29]	Univ Calif Davis [6]	Fac Sci Monastir [8]
Linkoping Univ [29]	Korea Inst Mat Sci [6]	Univ Texas [8]
Univ Patras [29]	Univ Texas Austin [6]	Univ Linz [7]
Univ Cambridge [28]	Wuhan Univ [6]	Univ Lyon 1 [7]
Eindhoven Univ Technol [27]	Natl Inst Stand & Technol [6]	Univ Osaka Prefecture [6]
Nanyang Technol Univ [26]	NE Normal Univ [6]	TITK Inst [6]
Jilin Univ [26]	Panason Elect Works Co Ltd [6]	Kyungil Univ [5]

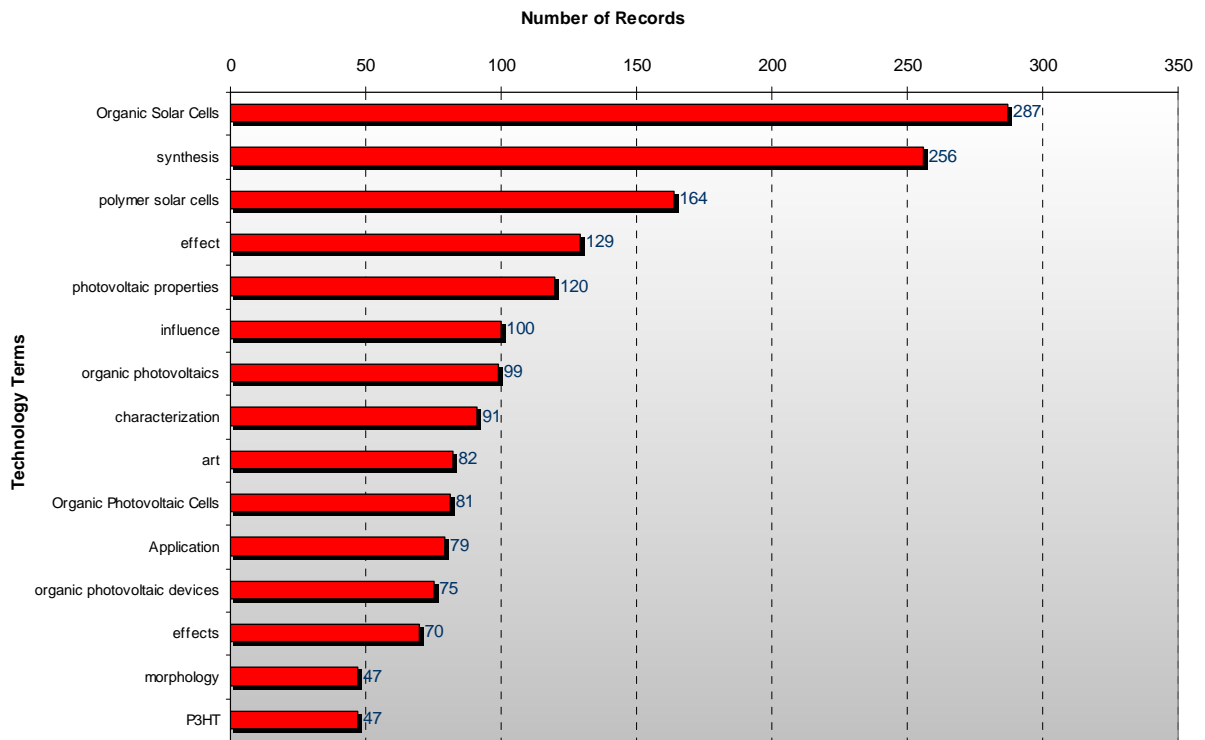
前十位中国机构如下:

Institution Name	Record Count
CHINESE ACAD SCI	180
S CHINA UNIV TECHNOL	47
JILIN UNIV	37
UNIV HONG KONG	27
BEIJING JIAOTONG UNIV	23
HONG KONG BAPTIST UNIV	19
CITY UNIV HONG KONG	18
ZHEJIANG UNIV	18
PEKING UNIV	16
FUDAN UNIV	15

5、技术术语分析

通过对聚合物及有机半导体太阳能电池研究 1064 篇科技论文中的技术术语进行分析，可以对聚合物及有机半导体太阳能电池研究领域出现的高频词分布有一个大致的了解。

Number of Records by Technology Term



Technology Trends in Last 3 Years

Last 3 Years is: 2010 – 2008

<u>Terms First Used in Last 3 Years</u>	<u>Terms No Longer Published in Last 3 Years</u>	<u>Unexpectedly high/low terms</u>
inverted organic solar cells [10]	ORGANIC SOLAR-CELLS [8]	photovoltaic properties [-1]
phenylenevinylene copolymer [5]	overview [6]	art [-.999]
Poly 3-hexylthiophene [5]	phys [6]	C-60 [-.996]
organic photovoltaic applications [4]	lett [6]	inverted polymer solar cells [.986]
perylene bisimide [4]	[Appl] [5]	MDMO-PPV [-.982]
Fullerene Organic Solar Cells [4]	acceptor nanodomains [5]	inverted organic solar cells [.981]
benzodithiophene [4]	6% [5]	ORGANIC SOLAR-CELLS [-.975]
growth [4]	heterojunction [5]	bulk heterojunction solar cells [.967]
heterojunction organic solar cells [4]	porphyrin [5]	PEDOT [.963]
room temperature [4]	nanoscale [4]	Fullerenes [-.943]
Solar Energy [4]	absorption spectra [4]	Photovoltaic Application [.941]
energy Conversion [3]	oligothiophenes [4]	energy transfer [-.937]
numerical Study [3]	operation [4]	lett [-.936]
Field-Effect Transistor [3]	exciton diffusion [4]	overview [-.936]

organic thin-film transistors [3]	organic heterojunction [4] PCBM bulk hetero-junction organic solar cells [4]	phys [-.936]
fluorene [3]		
conducting polymers [3]	photogeneration [4]	

6、作者概况

国际前十位作者:

SARICIFTCI, NS	87
LI, YF	81
KREBS, FC	77
YANG, Y	67
INGANAS, O	62
BRABEC, CJ	56
JANSSEN, RAJ	54
LEO, K	51
ZHANG, FL	37
CAO, Y	36

中国发文前十位的作者分析结果显示如下:

Author	Record Count
LI, YF	79
CAO, Y	33
DJURISIC, AB	24
YANG, CH	24
TIAN, WJ	23
CHAN, WK	22
HE, YJ	22
HE, C	18
LI, Y	18
ZHAN, XW	18

LI, YF 老师的 79 篇论文目录:

1. 标题: Synthesis and photovoltaic properties of two-dimensional conjugated polythiophenes with bi(thienylenevinylene) side chains

作者: Hou JH, Tan ZA, Yan Y, et al.

来源出版物: JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 卷: 128 期: 14 页: 4911-4916 出版年: APR 12 2006

被引频次: 199

2. 标题: A high-mobility electron-transport polymer with broad absorption and its use in field-effect transistors and all-polymer solar cells

作者: Zhan XW, Tan ZA, Domercq B, et al.

来源出版物: JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 卷: 129 期: 23 页: 7246-+ 出版年: JUN 13 2007
被引频次: 142

3. 标题: Conjugated polymer photovoltaic materials with broad absorption band and high charge carrier mobility

作者: Li YF, Zou YP

来源出版物: ADVANCED MATERIALS 卷: 20 期: 15 页: 2952-2958 出版年: AUG 4 2008

被引频次: 106

4. 标题: Synthesis and absorption spectra of poly(3-(phenylenevinyl)thiophene)s with conjugated side chains

作者: Hou JH, Huo LJ, He C, et al.

来源出版物: MACROMOLECULES 卷: 39 期: 2 页: 594-603 出版年: JAN 24 2006

被引频次: 67

5. 标题: Branched poly(thienylene vinylene)s with absorption spectra covering the whole visible region

作者: Hou JH, Tan Z, He YJ, et al.

来源出版物: MACROMOLECULES 卷: 39 期: 14 页: 4657-4662 出版年: JUL 11 2006

被引频次: 53

6. 标题: Hybrid nanocrystal/polymer solar cells based on tetrapod-shaped CdSexTe1-x nanocrystals

作者: Zhou Y, Li YC, Zhong HZ, et al.

来源出版物: NANOTECHNOLOGY 卷: 17 期: 16 页: 4041-4047 出版年: AUG 28 2006

被引频次: 50

7. 标题: Effect of side-chain end groups on the optical electrochemical, and photovoltaic properties of side-chain conjugated polythiophenes

作者: Zhou EJ, He C, Tan Z, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 44 期: 16 页: 4916-4922 出版年: AUG 15 2006

被引频次: 45

8. 标题: Synthesis and photovoltaic properties of a solution-processable organic molecule containing triphenylamine and DCM moieties

作者: He C, He QG, Yang XD, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 111 期: 24 页: 8661-8666 出版年: JUN 21 2007

被引频次: 42

9. 标题: Improving the efficiency of solution processable organic photovoltaic devices by a star-shaped molecular geometry

作者: He C, He QG, Yi YP, et al.

来源出版物: JOURNAL OF MATERIALS CHEMISTRY 卷: 18 期: 34 页: 4085-4090 出版年: 2008

被引频次: 39

10. 标题: Linking polythiophene chains through conjugated bridges: A way to improve charge transport in polymer solar cells
作者: Zhou EJ, Tan Z, Yang CH, et al.
来源出版物: MACROMOLECULAR RAPID COMMUNICATIONS 卷: 27 期: 10 页: 793-798 出版年: MAY 19 2006
被引频次: 34
11. 标题: Synthesis and photovoltaic properties of the copolymers of 2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene and 2,5-thienylene-vinylene
作者: Hou JH, Yang CH, Qiao J, et al.
来源出版物: SYNTHETIC METALS 卷: 150 期: 3 页: 297-304 出版年: MAY 10 2005
被引频次: 33
12. 标题: Effect of branched conjugation structure on the optical, electrochemical, hole mobility, and photovoltaic properties of polythiophenes
作者: Zhou EJ, Tan ZA, Huo LJ, et al.
来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 110 期: 51 页: 26062-26067 出版年: DEC 28 2006
被引频次: 29
13. 标题: Alternating copolymers of electron-rich arylamine and electron-deficient 2,1,3-benzothiadiazole: synthesis, characterization and photovoltaic properties
作者: Huo LJ, He C, Han MF, et al.
来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 45 期: 17 页: 3861-3871 出版年: SEP 1 2007
被引频次: 28
14. 标题: Synthesis and photovoltaic properties of a donor-acceptor double-cable polythiophene with high content of C-60 pendant
作者: Tan Z, Hou JH, He YJ, et al.
来源出版物: MACROMOLECULES 卷: 40 期: 6 页: 1868-1873 出版年: MAR 20 2007
被引频次: 28
15. 标题: [60]Fullerene-based molecular triads with expanded absorptions in the visible region: Synthesis and photovoltaic properties
作者: Xiao SQ, Li YL, Li YJ, et al.
来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 108 期: 43 页: 16677-16685 出版年: OCT 28 2004
被引频次: 28
16. 标题: Synthesis, hole mobility, and photovoltaic properties of cross-linked polythiophenes with vinylene-terthiophene-vinylene as conjugated bridge
作者: Zhou EJ, Tan Z, Yang Y, et al.
来源出版物: MACROMOLECULES 卷: 40 期: 6 页: 1831-1837 出版年: MAR 20 2007
被引频次: 27
17. 标题: Organic solar cells based on the spin-coated blend films of TPA-th-TPA and PCBM
作者: He C, He QG, He YJ, et al.

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 90 期: 12 页: 1815-1827 出版年: JUL 24 2006

被引频次: 27

18. 标题: Synthesis and properties of polythiophenes with conjugated side-chains containing carbon-carbon double and triple bonds

作者: Zhou EJ, Hou JH, Yang CH, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 44 期: 7 页: 2206-2214 出版年: APR 1 2006

被引频次: 25

19. 标题: Efficient all-polymer solar cells based on blend of tris(thienylenevinylene)-substituted polythiophene and poly[perylene diimide-alt-bis(dithienothiophene)]

作者: Tan ZA, Zhou EJ, Zhan XW, et al.

来源出版物: APPLIED PHYSICS LETTERS 卷: 93 期: 7 文献编号: 073309 出版年: AUG 18 2008

被引频次: 24

20. 标题: Polymer photovoltaic devices fabricated with blend MEHPPV and organic small molecules

作者: Deng XY, Zheng LP, Yang CH, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 108 期: 11 页: 3451-3456 出版年: MAR 18 2004

被引频次: 24

21. 标题: Low Bandgap pi-Conjugated Copolymers Based on Fused Thiophenes and Benzothiadiazole: Synthesis and Structure-Property Relationship Study

作者: Zhang SM, Guo YL, Fan HJ, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 47 期: 20 页: 5498-5508 出版年: OCT 15 2009

被引频次: 20

22. 标题: Poly(3,6-dihexyl-thieno[3,2-b]thiophene vinylene): Synthesis, Field-Effect Transistors, and Photovoltaic Properties

作者: He YJ, Wu WP, Zhao GJ, et al.

来源出版物: MACROMOLECULES 卷: 41 期: 24 页: 9760-9766 出版年: DEC 23 2008

被引频次: 20

23. 标题: Novel two-dimensional donor-acceptor conjugated polymers containing quinoxaline units: Synthesis, characterization, and photovoltaic properties

作者: Huo LJ, Tan ZA, Wang X, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 46 期: 12 页: 4038-4049 出版年: JUN 15 2008

被引频次: 19

24. 标题: Synthesis, hole mobility, and photovoltaic properties of two alternating poly[3-(hex-1-enyl)thiophene-co-thiophene]s

作者: Zhou EJ, Tan ZA, He YJ, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 45 期: 4 页: 629-638 出版年: FEB 15 2007

被引频次: 17

25. 标题: Nanosized rigid pi-conjugated molecular heterojunctions with multi[60] fullerenes: Facile synthesis and photophysical properties

作者: Wang JL, Duan XF, Jiang B, et al.

来源出版物: JOURNAL OF ORGANIC CHEMISTRY 卷: 71 期: 12 页: 4400-4410 出版年: JUN 9 2006

被引频次: 17

26. 标题: Electroluminescent and photovoltaic properties of the crosslinkable poly(phenylene vinylene) derivative with side chains containing vinyl groups

作者: Yang CH, Hou JH, Zhang B, et al.

来源出版物: MACROMOLECULAR CHEMISTRY AND PHYSICS 卷: 206 期: 13 页: 1311-1318 出版年: JUL 5 2005

被引频次: 17

27. 标题: Synthesis and photovoltaic properties of a star-shaped molecule with triphenylamine as core and benzo[1,2,5]thiadiazol vinylene as arms

作者: Wu GL, Zhao GJ, He C, et al.

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 93 期: 1 页: 108-113 出版年: JAN 2009

被引频次: 16

28. 标题: Indene-C-60 Bisadduct: A New Acceptor for High-Performance Polymer Solar Cells

作者: He YJ, Chen HY, Hou JH, et al.

来源出版物: JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 卷: 132 期: 4 页: 1377-1382 出版年: FEB 3 2010

被引频次: 15

29. 标题: Poly(alkylthio-p-phenylenevinylene): Synthesis and electroluminescent and photovoltaic properties

作者: Hou JH, Fan BH, Huo LJ, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 44 期: 3 页: 1279-1290 出版年: FEB 1 2006

被引频次: 15

30. 标题: Solution-Processable Multiarmed Organic Molecules Containing Triphenylamine and DCM Moieties: Synthesis and Photovoltaic Properties

作者: Zhao GJ, Wu GL, He C, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 113 期: 6 页: 2636-2642 出版年: FEB 12 2009

被引频次: 14

31. 标题: Photovoltaic devices with methanofullerenes as electron acceptors

作者: Li JX, Sun N, Guo ZX, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 106 期: 44 页: 11509-11514 出版年: NOV 7 2002

被引频次: 14

32. 标题: Synthesis and absorption spectra of n-type conjugated polymers based on perylene diimide
作者: Huo LJ, Zhou Y, Li YF
来源出版物: MACROMOLECULAR RAPID COMMUNICATIONS 卷: 29 期: 17 页: 1444-1448 出版年: SEP 1 2008
被引频次: 13
33. 标题: Copolymers of perylene diimide with dithienothiophene and dithienopyrrole as electron-transport materials for all-polymer solar cells and field-effect transistors
作者: Zhan XW, Tan ZA, Zhou EJ, et al.
来源出版物: JOURNAL OF MATERIALS CHEMISTRY 卷: 19 期: 32 页: 5794-5803 出版年: 2009
被引频次: 12
34. 标题: A polythiophene derivative with octyloxyl triphenylamine-vinylene conjugated side chain: Synthesis and its applications in field-effect transistor and polymer solar cell
作者: Zou YP, Sang GY, Wu WP, et al.
来源出版物: SYNTHETIC METALS 卷: 159 期: 3-4 页: 182-187 出版年: FEB 2009
被引频次: 10
35. 标题: Photovoltaic cells based on the blend of MEH-PPV and polymers with substituents containing C-60 moieties
作者: Yang CH, Li HM, Sun QJ, et al.
来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 85 期: 2 页: 241-249 出版年: JAN 15 2005
被引频次: 10
36. 标题: Improvement of Photoluminescent and Photovoltaic Properties of Poly(thienylene vinylene) by Carboxylate Substitution
作者: Huo LJ, Chen TL, Zhou Y, et al.
来源出版物: MACROMOLECULES 卷: 42 期: 13 页: 4377-4380 出版年: JUL 14 2009
被引频次: 9
37. 标题: Soluble Dithienothiophene Polymers: Effect of Link Pattern
作者: Zhang SM, Fan HJ, Liu Y, et al.
来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 47 期: 11 页: 2843-2852 出版年: JUN 1 2009
被引频次: 9
38. 标题: Electroluminescence and photovoltaic properties of poly(p-phenylene vinylene) derivatives with dendritic pendants
作者: Tan ZA, Tang RP, Zhou EJ, et al.
来源出版物: JOURNAL OF APPLIED POLYMER SCIENCE 卷: 107 期: 1 页: 514-521 出版年: JAN 5 2008
被引频次: 9
39. 标题: Synthesis, electrochemical and photovoltaic properties of multi-armed polythiophenes with triphenylamine trivinylene as conjugated linker
作者: Zou YP, Sang GY, Wan MX, et al.

来源出版物: MACROMOLECULAR CHEMISTRY AND PHYSICS 卷: 209 期: 14 页: 1454-1462 出版年: JUL 21 2008

被引频次: 8

40. 标题: Performance improvement of polymer solar cells by using a solution processible titanium chelate as cathode buffer layer

作者: Tan ZA, Yang CH, Zhou EJ, et al.

来源出版物: APPLIED PHYSICS LETTERS 卷: 91 期: 2 文献编号: 023509 出版年: JUL 9 2007

被引频次: 8

41. 标题: Dynamic Monte Carlo Simulation for Highly Efficient Polymer Blend Photovoltaics

作者: Meng LY, Shang Y, Li QK, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 114 期: 1 页: 36-41 出版年: JAN 14 2010

被引频次: 7

42. 标题: Synthesis, characterization and photovoltaic properties of poly{[1',4'-bis-(thienyl-vinyl)]-2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene-vinylene}

作者: Huo LJ, Hou JH, He C, et al.

来源出版物: SYNTHETIC METALS 卷: 156 期: 2-4 页: 276-281 出版年: FEB 1 2006

被引频次: 7

43. 标题: Poly(thienylene-vinylene-thienylene) with Cyano Substituent: Synthesis and Application in Field-Effect Transistor and Polymer Solar Cell

作者: Wan MX, Wu WP, Sang GY, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 47 期: 16 页: 4028-4036 出版年: AUG 15 2009

被引频次: 6

44. 标题: Incorporation of Thienylenevinylene and Triphenylamine Moieties into Polythiophene Side Chains for All-Polymer Photovoltaic Applications

作者: Sang GY, Zhou EJ, Huang Y, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 113 期: 14 页: 5879-5885 出版年: APR 9 2009

被引频次: 6

45. 标题: Synthesis, characterization and photovoltaic properties of thiophene copolymers containing conjugated side-chain

作者: Tan ZA, Zhou EJ, Yang Y, et al.

来源出版物: EUROPEAN POLYMER JOURNAL 卷: 43 期: 3 页: 855-861 出版年: MAR 2007

被引频次: 5

46. 标题: Thinner-film plastic photovoltaic cells based on different C-60 derivatives

作者: Yang CH, Li YJ, Hou JH, et al.

会议信息: 1st International Symposium on Novel Materials and their Synthesis/15th International Symposium on Fine Chemistry and Functional Polymers, OCT 17-20, 2005 Shanghai, PEOPLES R CHINA

来源出版物: POLYMERS FOR ADVANCED TECHNOLOGIES 卷: 17 期: 7-8 页: 500-505 出版年: JUL-AUG 2006

被引频次: 5

47. 标题: Synthesis and Photovoltaic Properties of Bithiazole-Based Donor-Acceptor Copolymers

作者: Zhang MJ, Fan HJ, Cuo X, et al.

来源出版物: MACROMOLECULES 卷: 43 期: 13 页: 5706-5712 出版年: JUL 13 2010

被引频次: 4

48. 标题: Solution processable D-A-D molecules based on triphenylamine for efficient organic solar cells

作者: Shang HX, Fan HJ, Shi QQ, et al.

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 94 期: 3 页: 457-464 出版年: MAR 2010

被引频次: 4

49. 标题: Solution-Processable Organic Molecule with Triphenylamine Core and Two Benzothiadiazole-Thiophene Arms for Photovoltaic Application

作者: Yang Y, Zhang J, Zhou Y, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 114 期: 8 页: 3701-3706 出版年: MAR 4 2010

被引频次: 4

50. 标题: Poly(thienylene-benzothiadiazole-thienylene-vinylene): A narrow bandgap polymer with broad absorption from visible to infrared region

作者: He YJ, Zhao GJ, Min J, et al.

来源出版物: POLYMER 卷: 50 期: 21 页: 5055-5058 出版年: OCT 9 2009

被引频次: 4

51. 标题: Polythiophene Derivative with the Simplest Conjugated-Side-Chain of Alkenyl: Synthesis and Applications in Polymer Solar Cells and Field-Effect Transistors

作者: Huang Y, Wang Y, Sang GY, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 112 期: 43 页: 13476-13482 出版年: OCT 30 2008

被引频次: 4

52. 标题: Two polythiophene-derivatives containing phenothiazine units: Synthesis and photovoltaic properties

作者: Sang GY, Zou YP, Li YF

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 112 期: 31 页: 12058-12064 出版年: AUG 7 2008

被引频次: 4

53. 标题: Poly(quinoxaline vinylene) with conjugated phenylenevinylene side chain: A potential polymer acceptor with broad absorption band

作者: Huo LJ, Tan ZA, Zhou Y, et al.

来源出版物: MACROMOLECULAR CHEMISTRY AND PHYSICS 卷: 208 期: 12 页: 1294-1300 出版年: JUN 19 2007

被引频次: 4

54. 标题: Hyperbranched conjugated polymers for photovoltaic applications

作者: Qiao J, Yang CH, He QG, et al.

来源出版物: JOURNAL OF APPLIED POLYMER SCIENCE 卷: 92 期: 3 页: 1459-1466

出版年: MAY 5 2004

被引频次: 4

55. 标题: All-polymer solar cells based on a blend of poly[3-(10-n-octyl-3-phenothiazine-vinylene)thiophene-co-2,5-thiophene] and poly[1,4-dioctyloxy-p-2,5-dicyanophenylenevinylene]

作者: Sang GY, Zou YP, Huang Y, et al.

来源出版物: APPLIED PHYSICS LETTERS 卷: 94 期: 19 文献编号: 193302 出版年: MAY 11 2009

被引频次: 3

56. 标题: Perylene diimide as organic photovoltaic acceptor materials

作者: Huo LJ, Han MF, Li YF

来源出版物: PROGRESS IN CHEMISTRY 卷: 19 期: 11 页: 1761-1769 出版年: NOV 2007

被引频次: 3

57. 标题: Copolymers from benzodithiophene and benzotriazole: synthesis and photovoltaic applications

作者: Zhang ZH, Peng B, Liu B, et al.

来源出版物: POLYMER CHEMISTRY 卷: 1 期: 9 页: 1441-1447 出版年: 2010

被引频次: 2

58. 标题: The photovoltaic behaviors of PPV- and PPE-type conjugated polymers featured with diketopyrrolopyrrole (DPP) units

作者: Zhang GQ, Liu K, Fan HJ, et al.

来源出版物: SYNTHETIC METALS 卷: 159 期: 19-20 页: 1991-1995 出版年: OCT 2009

被引频次: 2

59. 标题: A phenylenevinylene-thiophene-phenyleneethynylene copolymer: synthesis, characterization, and photovoltaic properties

作者: Zou YP, Tan Z, Huo LJ, et al.

来源出版物: POLYMERS FOR ADVANCED TECHNOLOGIES 卷: 19 期: 7 页: 865-871

出版年: JUL 2008

被引频次: 2

60. 标题: 6.5% Efficiency of Polymer Solar Cells Based on poly(3-hexylthiophene) and Indene-C-60 Bisadduct by Device Optimization

作者: Zhao GJ, He YJ, Li YF

来源出版物: ADVANCED MATERIALS 卷: 22 期: 39 页: 4355-+ 出版年: OCT 15 2010

被引频次: 1

61. 标题: High-Yield Synthesis and Electrochemical and Photovoltaic Properties of Indene-C-70 Bisadduct

作者: He YJ, Zhao GJ, Peng B, et al.

来源出版物: ADVANCED FUNCTIONAL MATERIALS 卷: 20 期: 19 页: 3383-3389 出版年: OCT 8 2010

被引频次: 1

62. 标题: Synthesis of Copolymers Based on Thiazolothiazole and Their Applications in Polymer Solar Cells

作者: Shi QQ, Fan HJ, Liu Y, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 114 期: 39 页: 16843-16848

出版年: OCT 7 2010

被引频次: 1

63. 标题: Effect of Carbon Chain Length in the Substituent of PCBM-like Molecules on Their Photovoltaic Properties

作者: Zhao GJ, He YJ, Xu Z, et al.

来源出版物: ADVANCED FUNCTIONAL MATERIALS 卷: 20 期: 9 页: 1480-1487 出版年: MAY 10 2010

被引频次: 1

64. 标题: Alkylthio-Substituted Polythiophene: Absorption and Photovoltaic Properties

作者: Huo LJ, Yi Z, Li YF

来源出版物: MACROMOLECULAR RAPID COMMUNICATIONS 卷: 30 期: 11 页: 925-931 出版年: JUN 2 2009

被引频次: 1

65. 标题: New cyano-substituted copolymers containing biphenylenevinylene and bithienylenevinylene units: synthesis, optical, and electrochemical properties

作者: Zou YP, Liu B, Li YF, et al.

来源出版物: JOURNAL OF MATERIALS SCIENCE 卷: 44 期: 15 页: 4174-4180 出版年: AUG 2009

被引频次: 1

66. 标题: Alternating Copolymers of Carbazole and Triphenylamine with Conjugated Side Chain Attaching Acceptor Groups Synthesis and Photovoltaic Application

作者: Zhang ZG, Liu YL, Yang Y, et al.

来源出版物: MACROMOLECULES 卷: 43 期: 22 页: 9376-9383 出版年: NOV 23 2010

被引频次: 0

67. 标题: Synthesis and Photovoltaic Properties of a Copolymer of Benzo[1,2-b:4,5-b']dithiophene and Bithiazole

作者: Zhang MJ, Fan HJ, Guo X, et al.

来源出版物: MACROMOLECULES 卷: 43 期: 21 页: 8714-8717 出版年: NOV 9 2010

被引频次: 0

68. 标题: Efficiency enhancement in small molecule bulk heterojunction organic solar cells via additive

作者: Fan HJ, Shang HX, Li YF, et al.

来源出版物: APPLIED PHYSICS LETTERS 卷: 97 期: 13 文献编号: 133302 出版年: SEP 27 2010

被引频次: 0

69. 标题: Synthesis and Photovoltaic Properties of Copolymers from Benzodithiophene and Thiazole

作者: Yang MA, Peng B, Liu B, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY C 卷: 114 期: 41 页: 17989-17994

出版年: OCT 21 2010

被引频次: 0

70. 标题: Synthesis and characterization of low bandgap poly(dithienosilole vinylene) derivatives

作者: He YJ, Zhao GJ, Zhang MJ, et al.

来源出版物: SYNTHETIC METALS 卷: 160 期: 9-10 页: 1045-1049 出版年: MAY 2010

被引频次: 0

71. 标题: Poly(4,8-bis(2-ethylhexyloxy)benzo[1,2-b:4,5-b']dithiophene vinylene): Synthesis, Optical and Photovoltaic Properties

作者: He YJ, Zhou Y, Zhao GJ, et al.

来源出版物: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY 卷: 48 期: 8 页: 1822-1829 出版年: APR 15 2010

被引频次: 0

72. 标题: Synthesis and characterization of red-emission PPV copolymers containing fluorenone unit

作者: Zou YP, Pan CY, Zhang ZH, et al.

来源出版物: JOURNAL OF CENTRAL SOUTH UNIVERSITY OF TECHNOLOGY 卷: 17 期: 2 页: 269-276 出版年: APR 2010

被引频次: 0

73. 标题: Spatial Conformation and Charge Recombination Properties of Polythiophene Derivatives with Thienylene-Vinylene Side Chains Investigated by Static and Femtosecond Spectroscopy

作者: Meng K, Ding Q, Wang SF, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 114 期: 8 页: 2602-2606 出版年: MAR 4 2010

被引频次: 0

74. 标题: Photovoltaic Materials in Polymer Solar Cells

作者: He YJ, Li YF

来源出版物: PROGRESS IN CHEMISTRY 卷: 21 期: 11 页: 2303-2318 出版年: NOV 2009

被引频次: 0

75. 标题: Influence of Sulfur Oxidation on the Absorption and Electronic Energy Levels of Poly(thienothiophene) Derivatives

作者: He YJ, Zhang MJ, Min J, et al.

来源出版物: JOURNAL OF PHYSICAL CHEMISTRY B 卷: 113 期: 45 页: 14981-14985 出版年: NOV 12 2009

被引频次: 0

76. 标题: Synthesis and Photovoltaic Properties of Polythiophene Derivatives with Side Chains Containing C-60 End Group

作者: He YJ, Hou JH, Tan ZA, et al.

来源出版物: JOURNAL OF APPLIED POLYMER SCIENCE 卷: 115 期: 1 页: 532-539 出版年: JAN 5 2010

被引频次: 0

77. 标题: A Polythiophene Derivative with Dioctyloxyltriphenylamine-Vinylene Conjugated Side Chain: Synthesis, Hole Mobility, and Photovoltaic Property
作者: Wan MX, Sang GY, Zou YP, et al.
来源出版物: JOURNAL OF APPLIED POLYMER SCIENCE 卷: 113 期: 3 页: 1415-1421
出版年: AUG 5 2009
被引频次: 0

78. 标题: Fluorescence and sensitization performance of phenylene-vinylene-substituted polythiophene
作者: Chen JM, Hou JH, Li YF, et al.
来源出版物: CHINESE SCIENCE BULLETIN 卷: 54 期: 10 页: 1669-1676 出版年: MAY 2009
被引频次: 0

79. 标题: Photovoltaic properties of MEH-PPV doped with new methanofullerene derivatives
作者: Li JX, Sun N, Guo ZX, et al.
会议信息: International Conference on Science and Technology of Synthetic Metals (ICSM 2002), JUN 29-JUL 05, 2002 SHANGHAI, PEOPLES R CHINA
来源出版物: SYNTHETIC METALS 卷: 137 期: 1-3 特刊: Part 2 Sp. Iss. SI 页: 1527-1528 子辑: Part 2 Sp. Iss. SI 出版年: APR 4 2003
被引频次: 0

三、基于 Web of Science 数据库的文献调研

1、高被引综述

据 Web of Science 数据库统计结果显示: 聚合物及有机半导体太阳能电池研究领域的综述论文共有 156 篇, 以下列出了前 10 位的高被引综述。

1. 标题: Conjugated polymer-based organic solar cells
作者: Gunes S, Neugebauer H, Sariciftci NS
来源出版物: CHEMICAL REVIEWS 卷: 107 期: 4 页: 1324-1338 出版年: APR 2007
被引频次: 900
2. 标题: Small molecular weight organic thin-film photodetectors and solar cells
作者: Peumans P, Yakimov A, Forrest SR
来源出版物: JOURNAL OF APPLIED PHYSICS 卷: 93 期: 7 页: 3693-3723 出版年: APR 1 2003
被引频次: 819
3. 标题: Conjugated polymer photovoltaic cells
作者: Coakley KM, McGehee MD
来源出版物: CHEMISTRY OF MATERIALS 卷: 16 期: 23 页: 4533-4542 出版年: NOV 16 2004
被引频次: 765
4. 标题: Organic solar cells: An overview
作者: Hoppe H, Sariciftci NS

来源出版物: JOURNAL OF MATERIALS RESEARCH 卷: 19 期: 7 页: 1924-1945 出版年: JUL 2004

被引频次: 651

5. 标题: Organic photovoltaics - Polymer-fullerene composite solar cells

作者: Thompson BC, Frechet JMJ

来源出版物: ANGEWANDTE CHEMIE-INTERNATIONAL EDITION 卷: 47 期: 1 页: 58-77

出版年: 2008

被引频次: 586

6. 标题: A brief history of the development of organic and polymeric photovoltaics

作者: Spanggaard H, Krebs FC

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 83 期: 2-3 页: 125-146 出版年: JUN 15 2004

被引频次: 384

7. 标题: Low band gap polymers for organic photovoltaics

作者: Bundgaard E, Krebs FC

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 91 期: 11 页: 954-985 出版年: JUL 6 2007

被引频次: 327

8. 标题: Low bandgap polymers for photon harvesting in bulk heterojunction solar cells

作者: Winder C, Sariciftci NS

来源出版物: JOURNAL OF MATERIALS CHEMISTRY 卷: 14 期: 7 页: 1077-1086 出版年: 2004

被引频次: 314

9. 标题: Stability/degradation of polymer solar cells

作者: Jorgensen M, Norrman K, Krebs FC

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 92 期: 7 页: 686-714 出版年: JUL 2008

被引频次: 269

10. 标题: Structural order in conjugated oligothiophenes and its implications on opto-electronic devices

作者: Fichou D

来源出版物: JOURNAL OF MATERIALS CHEMISTRY 卷: 10 期: 3 页: 571-588 出版年: 2000

被引频次: 252

2、高被引论文

Web of Science 数据库有关聚合物及有机半导体太阳能电池研究方向的研究论文有 1064 篇, 聚合物及有机半导体太阳能电池研究领域中被引用次数最高的前 10 篇论文为:

1. 标题: POLYMER PHOTOVOLTAIC CELLS - ENHANCED EFFICIENCIES VIA A NETWORK OF INTERNAL DONOR-ACCEPTOR HETEROJUNCTIONS

作者: YU G, GAO J, HUMMELEN JC, et al.

来源出版物: SCIENCE 卷: 270 期: 5243 页: 1789-1791 出版年: DEC 15 1995
被引频次: 2,551

2. 标题: Hybrid nanorod-polymer solar cells
作者: Huynh WU, Dittmer JJ, Alivisatos AP
来源出版物: SCIENCE 卷: 295 期: 5564 页: 2425-2427 出版年: MAR 29 2002
被引频次: 1,799

3. 标题: 2-LAYER ORGANIC PHOTOVOLTAIC CELL
作者: TANG CW
来源出版物: APPLIED PHYSICS LETTERS 卷: 48 期: 2 页: 183-185 出版年: JAN 13 1986
被引频次: 1,541

4. 标题: High-efficiency solution processable polymer photovoltaic cells by self-organization of polymer blends
作者: Li G, Shrotriya V, Huang JS, et al.
来源出版物: NATURE MATERIALS 卷: 4 期: 11 页: 864-868 出版年: NOV 2005
被引频次: 1,273

5. 标题: Thermally stable, efficient polymer solar cells with nanoscale control of the interpenetrating network morphology
作者: Ma WL, Yang CY, Gong X, et al.
来源出版物: ADVANCED FUNCTIONAL MATERIALS 卷: 15 期: 10 页: 1617-1622 出版年: OCT 2005
被引频次: 1,260

6. 标题: 2.5% efficient organic plastic solar cells
作者: Shaheen SE, Brabec CJ, Sariciftci NS, et al.
来源出版物: APPLIED PHYSICS LETTERS 卷: 78 期: 6 页: 841-843 出版年: FEB 5 2001
被引频次: 1,242

7. 标题: Self-organized discotic liquid crystals for high-efficiency organic photovoltaics
作者: Schmidt-Mende L, Fechtenkötter A, Müllen K, et al.
来源出版物: SCIENCE 卷: 293 期: 5532 页: 1119-1122 出版年: AUG 10 2001
被引频次: 904

8. 标题: Conjugated polymer-based organic solar cells
作者: Gunes S, Neugebauer H, Sariciftci NS
来源出版物: CHEMICAL REVIEWS 卷: 107 期: 4 页: 1324-1338 出版年: APR 2007
被引频次: 900

9. 标题: Small molecular weight organic thin-film photodetectors and solar cells
作者: Peumans P, Yakimov A, Forrest SR
来源出版物: JOURNAL OF APPLIED PHYSICS 卷: 93 期: 7 页: 3693-3723 出版年: APR 1 2003
被引频次: 819

10. 标题: Efficient tandem polymer solar cells fabricated by all-solution processing

作者: Kim JY, Lee K, Coates NE, et al.

来源出版物: SCIENCE 卷: 317 期: 5835 页: 222-225 出版年: JUL 13 2007

被引频次: 809

3、会议论文

聚合物及有机半导体太阳能电池研究领域上发表会议论文数量前 10 个的会议为:

会议名称	论文数
CONFERENCE ON ORGANIC PHOTOVOLTAICS	79
IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE	36
CONFERENCE ON ORGANIC OPTOELECTRONICS AND PHOTONICS II	26
INTERNATIONAL CONFERENCE ON SCIENCE AND TECHNOLOGY OF SYNTHETIC METALS	19
SYMPOSIUM ON THIN FILM AND NONO-STRUCTURED MATERIALS FOR PHOTOVOLTAICS	17
INTERNATIONAL PHOTOVOLTAIC SCIENCE AND ENGINEERING CONFERENCE	16
NATIONAL MEETING OF THE AMERICAN-CHEMICAL SOCIETY	16
WORLD CONFERENCE ON PHOTOVOLTAIC ENERGY CONVERSION	14
SYMPOSIUM ON ADVANCED MATERIALS AND CONCEPTS FOR PHOTOVOLTAICS HELD AT THE EMRS CONFERENCE	14
INTERNATIONAL CONFERENCE ON SCIENCE AND TECHNOLOGY OF SYNTHETIC METALS (ICSM)	12

其中高被引用次数前 10 位的会议论文为:

1. 标题: From molecules to materials: Current trends and future directions

作者: Alivisatos AP, Barbara PF, Castleman AW, et al.

会议信息: Workshop on From Molecules to Materials, APR 30-MAY 02, 1997 AUSTIN, TEXAS

来源出版物: ADVANCED MATERIALS 卷: 10 期: 16 页: 1297-1336 出版年: NOV 10 1998

被引频次: 301

2. 标题: Hybrid photovoltaic devices of polymer and ZnO nanofiber composites

作者: Olson DC, Piris J, Collins RT, et al.

会议信息: 4th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, APR 07-08, 2005 Tokyo, JAPAN

来源出版物: THIN SOLID FILMS 卷: 496 期: 1 页: 26-29 出版年: FEB 1 2006

被引频次: 164

3. 标题: Flexible, long-lived, large-area, organic solar cells

作者: Lungenschmied C, Dennler G, Neugebauer H, et al.

会议信息: European Conference on Hybrid Organic Solar Cells (ECHOS 06), JUN 28-30, 2006 Paris, FRANCE

来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 91 期: 5 页: 379-384 出版年: MAR 6 2007
被引频次: 118

4. 标题: Disclosure of the nanostructure of MDMO-PPV : PCBM bulk hetero-junction organic solar cells by a combination of SPM and TEM
作者: Martens T, D'Haen J, Munters T, et al.
会议信息: Spring Meeting of the European-Materials-Research-Society (E-MRS), JUN 18-21, 2002 STRASBOURG, FRANCE
来源出版物: SYNTHETIC METALS 卷: 138 期: 1-2 页: 243-247 出版年: JUN 2 2003
被引频次: 111

5. 标题: Single-wall carbon nanotube-polymer solar cells
作者: Landi BJ, Raffaella RP, Castro SL, et al.
会议信息: 18th Space Photovoltaic Research and Technology (SPRAT 18), SEP 16-18, 2003 Ohio Aerospace Inst, Cleveland, OH
来源出版物: PROGRESS IN PHOTOVOLTAICS 卷: 13 期: 2 页: 165-172 出版年: MAR 2005
被引频次: 87

6. 标题: Accurate efficiency determination and stability studies of conjugated polymer/fullerene solar cells
作者: Kroon JM, Wienk MM, Verhees WJH, et al.
会议信息: E-MRS 2001 Spring Meeting, JUN 05-08, 2001 STRASBOURG, FRANCE
来源出版物: THIN SOLID FILMS 卷: 403 页: 223-228 出版年: FEB 1 2002
被引频次: 87

7. 标题: Photocurrent spectroscopy for the investigation of charge carrier generation and transport mechanisms in organic p/n-junction solar cells
作者: Rostalski J, Meissner D
会议信息: ECOS 98 Seminar, JUL, 1998 NANCY, FRANCE
来源出版物: SOLAR ENERGY MATERIALS AND SOLAR CELLS 卷: 63 期: 1 页: 37-47
出版年: JUN 15 2000
被引频次: 87

8. 标题: Large area plastic solar cell modules
作者: Krebs FC, Spanggard H, Kjaer T, et al.
会议信息: SVC 2nd Symposium on Smart Materials, APR 23-28, 2005 Denver, CO
来源出版物: MATERIALS SCIENCE AND ENGINEERING B-SOLID STATE MATERIALS FOR ADVANCED TECHNOLOGY 卷: 138 期: 2 页: 106-111 出版年: MAR 25 2007
被引频次: 86

9. 标题: How to model the behaviour of organic photovoltaic cells
作者: Moliton A, Nunzi JM
会议信息: Conference on Devices and Electronics of Organics (DIELOR), 2004 Univ Limoges, Limoges, FRANCE
来源出版物: POLYMER INTERNATIONAL 卷: 55 期: 6 页: 583-600 出版年: JUN 2006
被引频次: 82

10. 标题: Carbon nanotubes for power applications

作者: Raffaele RP, Landi BJ, Harris JD, et al.

会议信息: 3rd Conference on Thin Films and Nanomaterials for Energy Conversion and Storage, SEP, 2003 Ohio Aerosp Inst, Cleveland, OH

来源出版物: MATERIALS SCIENCE AND ENGINEERING B-SOLID STATE MATERIALS FOR ADVANCED TECHNOLOGY 卷: 116 期: 3 页: 233-243 出版年: FEB 15 2005

被引频次: 80

4、期刊分布

发表论文数量排在前 10 位的期刊为:

期刊名称	论文数
APPLIED PHYSICS LETTERS	335
SOLAR ENERGY MATERIALS AND SOLAR CELLS	330
JOURNAL OF MATERIALS CHEMISTRY	130
ORGANIC ELECTRONICS	130
THIN SOLID FILMS	126
SYNTHETIC METALS	124
JOURNAL OF PHYSICAL CHEMISTRY C	120
JOURNAL OF APPLIED PHYSICS	117
ADVANCED FUNCTIONAL MATERIALS	108
MACROMOLECULES	103

5、基金资助

排在前 10 位的基金资助机构为:

基金资助机构	论文数
NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA	112
NATIONAL SCIENCE FOUNDATION	94
NSF	60
NSFC	51
CHINESE ACADEMY OF SCIENCES	47
OFFICE OF NAVAL RESEARCH	32
DOE	30
EPSRC	29
NATIONAL SCIENCE COUNCIL	27
AFOSR	25

由国家自然科学基金资助的发表研究论文前 10 位的机构为:

基金资助的机构	论文数
CHINESE ACAD SCI	43

JILIN UNIV	18
S CHINA UNIV TECHNOL	11
CENT S UNIV	7
PEKING UNIV	7
BEIJING JIAOTONG UNIV	6
TIANJIN UNIV	5
ZHEJIANG UNIV	5
OSAKA UNIV	4
TIANJIN KEY LAB COMPOSITE & FUNCT MAT	4

四、Ei 数据来源、检索年限及检索策略

EI 数据库是由 ELSEVIER ENGINEERING INFORMATION 公司出版，为工程类文摘数据库，收录期刊、会议论文、技术报告等的文摘，是工程技术领域权威检索工具。

检索年限：1969-至今

主题=(("Organic solar cell*" or "Polymer Solar Cell*" or "polymer photovoltaic*" or "Organic photovoltaic*" or "polymer-based organic solar cell*" or "polymer photovoltaic material*" or "Polymer-fullerene composite solar cell*") WN All fields)

五、基于 Ei 数据库的趋势分析

1、论文产出与增长趋势

EI 数据库收录聚合物及有机半导体太阳能电池领域论文 1785 篇，其中中国论文 227 篇，通过发表年代进行统计分析，可以清晰的看到聚合物及有机半导体太阳能电池论文发表数量趋势。

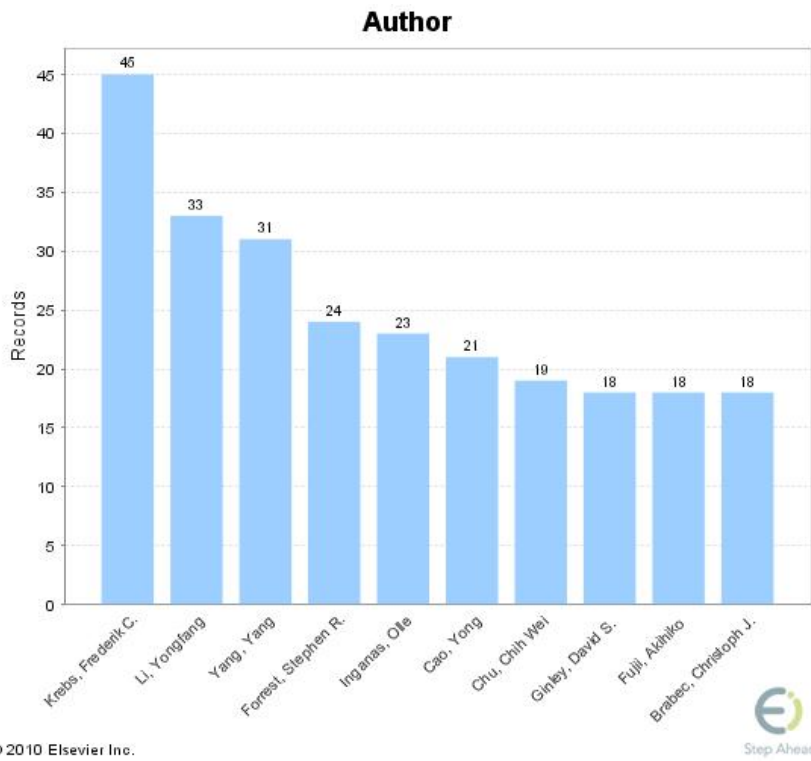
聚合物及有机半导体太阳能电池研究的科技论文产出数量

Publication Year	International Record Count	China Record Count
1978	2	
1982	2	
1984	1	
1986	4	
1987	2	

1988	3	
1990	1	
1991	3	
1992	1	
1993	2	
1995	2	
1996	1	
1997	5	1
1998	4	
1999	6	
2000	13	
2001	19	1
2002	30	2
2003	22	6
2004	69	5
2005	100	15
2006	115	13
2007	139	20
2008	228	37
2009	352	41
2010	570	78
2011	11	2

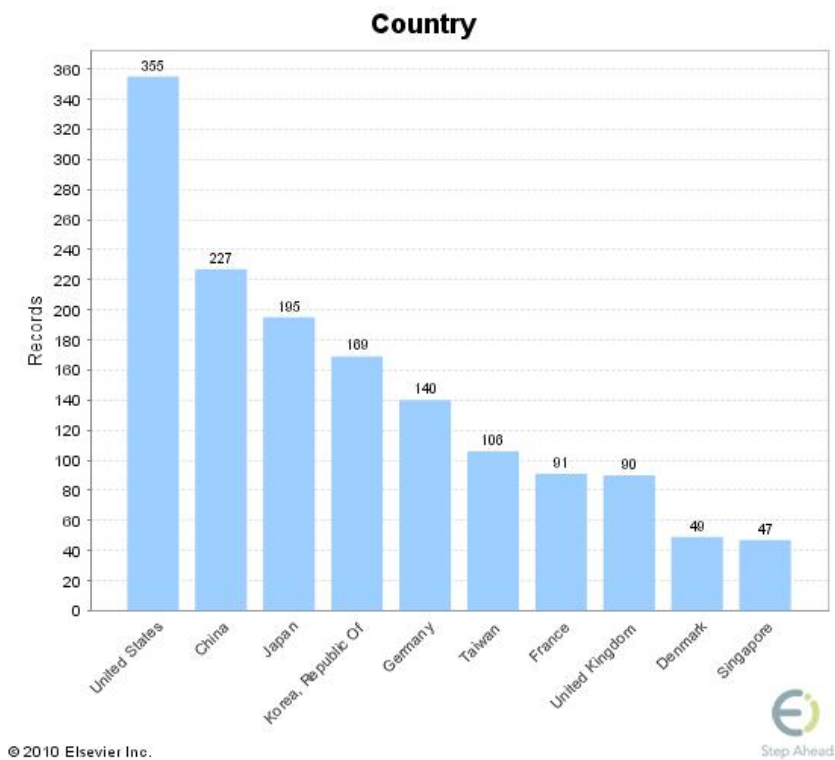
2、作者概况

发文前十位的作者分析结果显示如下：



3、国家分布概况

聚合物及有机半导体太阳能电池研究前 10 个主要合作的国家和地区如下；



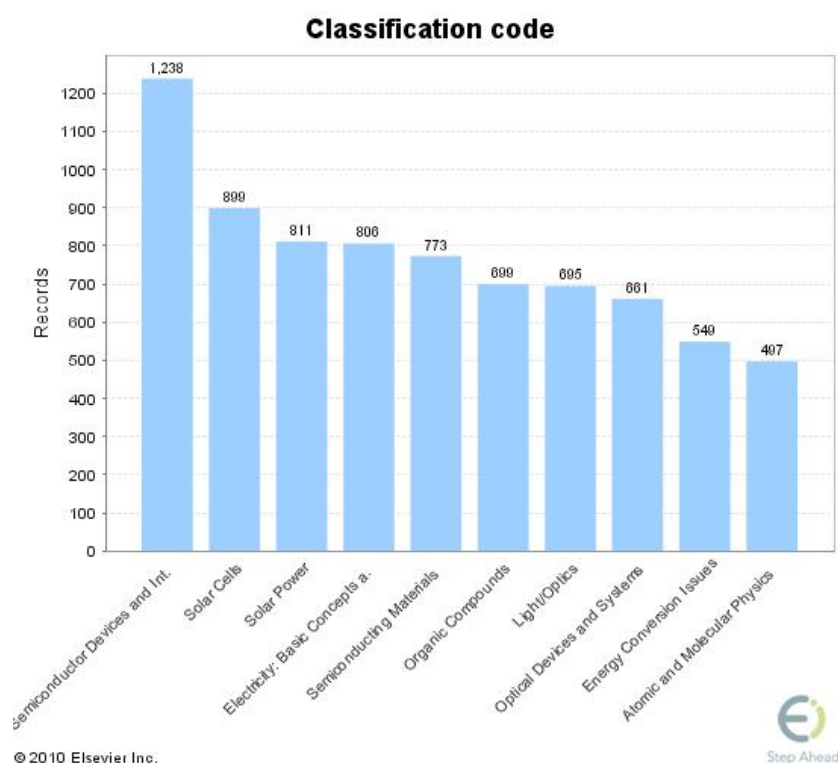
4、机构分布概况

前 10 个发文国际机构如下：

Institution Name	Record Count
National Renewable Energy Laboratory	31
Research Center For Applied Sciences, Academia Sinica	18
Riso National Laboratory For Sustainable Energy, Technical University Of Denmark	14
Department Of Chemistry, University Of Arizona	14
Beijing National Laboratory For Molecular Sciences, Institute Of Chemistry, Chinese Academy Of Sciences	14
Department Of Materials Science And Engineering, National Taiwan University	14
Department Of Photonics, National Chiao Tung University	13
Institute Of Polymer Science And Engineering, National Taiwan University	13
Konarka Technologies Gmbh	12
Department Of Materials Science And Engineering, University Of Florida	12

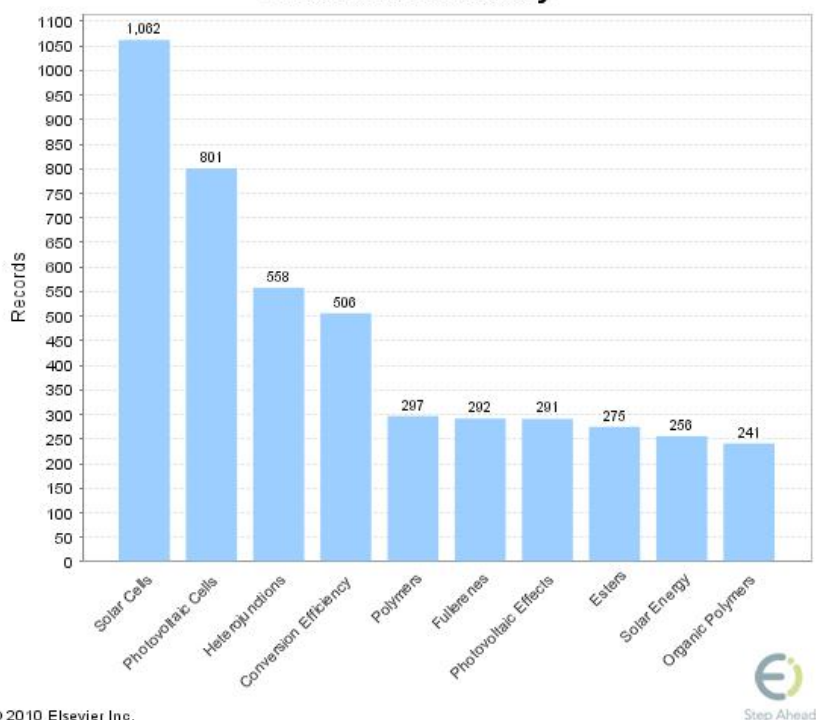
5、技术术语分析

Ei 数据库专业人士给出的 Classification code 如下：



Ei 数据库专业人士给出的 Controlled vocabulary 如下：

Controlled vocabulary



6、会议论文

聚合物及有机半导体太阳能电池研究领域会议论文共计 340 篇，发表会议论文数量前 10 个的会议为：

会议名称	论文数
CONFERENCE ON ORGANIC PHOTOVOLTAICS	15
IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE	12
SYMPOSIUM ON THIN FILM AND NANOSTRUCTURED MATERIALS FOR PHOTOVOLTAICS HELD AT THE EMRS MEETING	12
WORLD CONFERENCE ON PHOTOVOLTAIC ENERGY CONVERSION	5
INTERNATIONAL CONFERENCE ON SCIENCE AND TECHNOLOGY OF SYNTHETIC METALS	5
CONFERENCE ON PHOTONICS FOR SOLAR ENERGY SYSTEMS	4
INTERNATIONAL PHOTOVOLTAIC SCIENCE AND ENGINEERING CONFERENCE	3
SYMPOSIUM ON ADVANCED MATERIALS AND CONCEPTS FOR PHOTOVOLTAICS HELD AT THE EMRS CONFERENCE	3
CONFERENCE ON NANOSCALE PHOTONIC AND CELL TECHNOLOGIES FOR PHOTOVOLTAICS	3
CONFERENCE ON ORGANIC OPTOELECTRONICS AND PHOTONICS	3

会议论文前 10 位作者:

作者	论文数
Krebs, Frederik C.	11
Tsutsui, Tetsuo	6
Armstrong, Neal R.	6
Salleh, Muhamad Mat	6
Ginley, David S.	5
Yahaya, Muhammad	5
Olson, Dana C.	5
Vanderzande, D.	5
Lin, Ching Fuh	5
Sakai, Jun	4

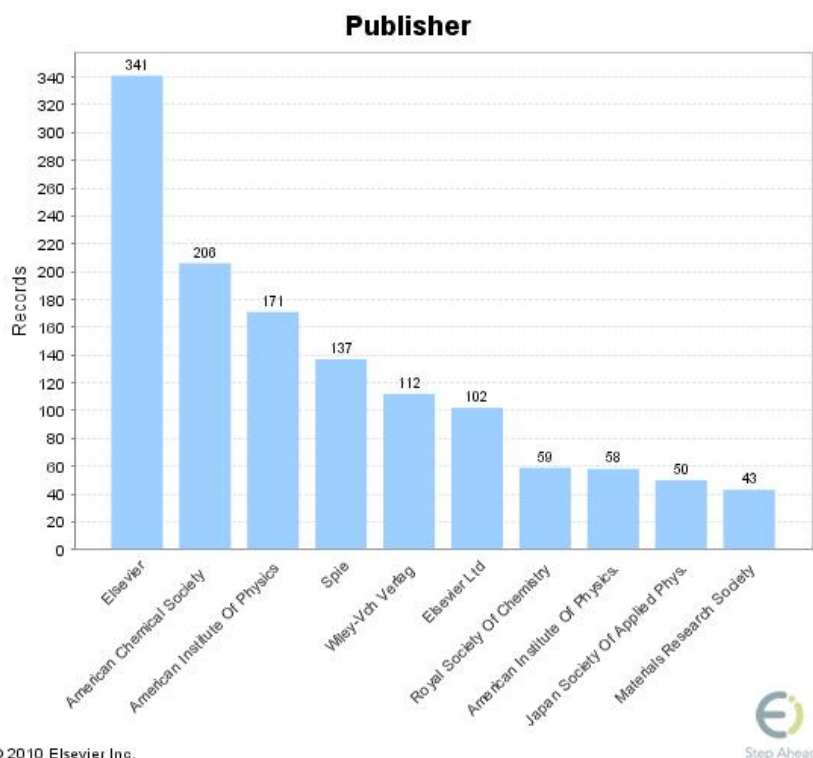
7、期刊分布

发表论文数量排在前 10 位的期刊或会议为:

Solar Energy Materials And Solar Cells	198
Applied Physics Letters	173
Proceedings Of Spie - The International Society For Optical Engineering	139
Organic Electronics: Physics, Materials, Applications	79
Synthetic Metals	67
Thin Solid Films	54
Journal Of Applied Physics	50
Journal Of Materials Chemistry	47
Advanced Functional Materials	40
Journal Of Physical Chemistry C	37

8、数据库商

排在前 10 位的数据库商为:



六、小结

以美国科学情报研究所（ISI）开发的基于 Web 的 Web of Science 网络数据库为数据源基础，对 1899-至今的 SCIE 和 1990-至今的 CPCI-S 中收录的聚合物及有机半导体太阳能电池研究领域论文的情况进行了统计与分析。

以 ELSEVIER ENGINEERING INFORMATION 公司出版 EI 数据库为数据源基础，对 1969-至今的 EI 收录的聚合物及有机半导体太阳能电池研究领域论文的情况进行了统计与分析。

目的在于了解聚合物及有机半导体太阳能电池研究领域的概况，提供一定参考。

如有纰漏，请指正。

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