



中国热点论文榜

中国科学院文献情报中心科学计量团队

“热点论文”在科学界已经是耳熟能详的名词。顾名思义，热点论文即为众人所关注的论文。这种关注度在科学计量学领域可以用论文被引用的次数来量化和测度。我们以2012—2016年中国科学家的SCI论文为数据基础，分领域统计了自发表以来被引频次最高的论文，以展现颇具显示度的中国科技成果。本期发布的热点论文榜涉及数学、物理学、化学、生物学、医学、农学、地学、环境科学和工程技术9个领域。

表1 中国数学领域热点论文(2012—2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Yuan Xiaoming*等. On the $O(1/N)$ Convergence Rate of the Douglas-Rachford Alternating Direction Method. <i>SIAM Journal on Numerical Analysis</i> , 2012, 50(2): 700-709.	香港浸会大学†	-	177
2	Wang Zhigang*等. Some Basic Properties of Certain Subclasses of Meromorphically Starlike Functions. <i>Journal of Inequalities and Applications</i> , 2014, 29(1)1-13.	安阳师范学院†	是	156
3	Tao Youshan等. Boundedness in a Quasilinear Parabolic-Parabolic Keller-Segel System with Subcritical Sensitivity. <i>Journal of Differential Equations</i> , 2012, 252(1): 692-715.	东华大学	是	149
4	Li Fuyi*等. Existence of a Positive Solution to Kirchhoff Type Problems without Compactness Conditions. <i>Journal of Differential Equations</i> , 2012, 253(7): 2285-2294.	山西大学†	是	126
5	Gao Weifeng*等. A Global Best Artificial Bee Colony Algorithm for Global Optimization. <i>Journal of Computational and Applied Mathematics</i> , 2012, 236(11): 2741-2753.	西安电子科技大学†	-	122
6	Zhu Zuonong等. Solving the (3+1)-Dimensional Generalized KP and BKP Equations by the Multiple Exp-Function Algorithm. <i>Applied Mathematics and Computation</i> , 2012, 218(24): 11871-11879.	上海交通大学	是	120
7	He Xiaoming*等. Existence and Concentration Behavior of Positive Solutions for a Kirchhoff Equation in R^3 . <i>Journal of Differential Equations</i> , 2012, 252(2): 1813-1834.	中央民族大学†	-	117
8	Wang Jun*等. Multiplicity and Concentration of Positive Solutions for a Kirchhoff Type Problem with Critical Growth. <i>Journal of Differential Equations</i> , 2012, 253(7): 2314-2351.	江苏大学†	-	114
9	Zhang Ziheng*等. Periodic Solutions for a Singular Damped Differential Equation. <i>Boundary Value Problems</i> , 2015: 5.	天津工业大学†	-	107
10	Lu Bin*. The First Integral Method for Some Time Fractional Differential Equations. <i>Journal of Mathematical Analysis and Applications</i> , 2012, 395(2): 684-693.	安徽大学†	-	102



表2 中国物理学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Zhang J等. Review of Particle Physics Particle Data Group. Physical Review D, 2012, 86(1).	中国科学院高能物理研究所	是	4 987
2	Zhang J等. Review of Particle Physics Particle Data Group. Chinese Physics C, 2014, 38(9).	中国科学院高能物理研究所	是	4 310
3	Bai Y等. Observation of a New Particle in the Search for the Standard Model Higgs Boson with the Atlas Detector at the LHC. Physics Letters B, 2012, 716(1): 1-29.	中国科学院高能物理研究所	是	4 222
4	Wang J等. Observation of a New Boson at a Mass of 125 GeV with the CMS Experiment at the LHC. Physics Letters B, 2012, 716(1): 30-61.	中国科学院高能物理研究所	是	4 041
5	Wu Hongbin*等. Enhanced Power-Conversion Efficiency in Polymer Solar Cells Using an Inverted Device Structure. Nature Photonics, 2012, 6(9): 591-595.	华南理工大学†	-	2 559
6	Cao J等. Observation of Gravitational Waves from a Binary Black Hole Merger. Physical Review Letters, 2016, 116(6).	清华大学	是	1 173
7	An FP*等. Observation of Electron-Antineutrino Disappearance at Daya Bay. Physical Review Letters, 2012, 108(17).	中国科学院高能物理研究所	是	1 127
8	Yao Wang*等. Coupled Spin and Valley Physics in Monolayers of MoS ₂ and Other Group-VI Dichalcogenides. Physical Review Letters, 2012, 108(19).	香港大学†	是	1 074
9	Shao HS等. The Automated Computation of Tree-Level and Next-to-Leading Order Differential Cross Sections, and Their Matching to Parton Shower Simulations. Journal of High Energy Physics, 2014, (7).	北京大学	是	947
10	Gao F等. Dark Matter Results from 225 Live Days of XENON100 Data. Physical Review Letters, 2012, 109(18).	上海交通大学	是	922

- 注: 1. 作者: 如果通讯作者是中国人, 则以*表示通讯作者; 如果通讯作者为非中国人, 则仅列出第一个出现的中国作者。
 2. 作者机构: 如果通讯作者是中国人且所在机构为中国机构, 则通讯作者所在机构以†表示; 如果通讯作者为非中国人, 则仅列出第一个出现的中国机构。
 3. 数据下载时间: 2017年8月22日。



表3 中国化学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Wang Guoping*等. A Review of Electrode Materials for Electrochemical Supercapacitors. <i>Chemical Society Reviews</i> , 2012, 41(2): 797-828.	南华大学†	是	2 777
2	Qian Guodong*等. Luminescent Functional Metal-Organic Frameworks. <i>Chemical Reviews</i> , 2012, 112(2): 1126-1162.	浙江大学†	是	2 689
3	Lu Tian*等. Multiwfn: A Multifunctional Wavefunction Analyzer. <i>Journal of Computational Chemistry</i> , 2012, 33(5): 580-592.	北京科技大学†	-	1 776
4	Li Yongfang*. Molecular Design of Photovoltaic Materials for Polymer Solar Cells: Toward Suitable Electronic Energy Levels and Broad Absorption. <i>Accounts of Chemical Research</i> , 2012, 45(5): 723-733.	中国科学院化学研究所†	-	1 389
5	Yu Jianguo*等. Graphene-Based Semiconductor Photocatalysts. <i>Chemical Society Reviews</i> , 2012, 41(2): 782-796.	武汉理工大学†	是	1 243
5	Cheng Huiming*等. The Reduction of Graphene Oxide. <i>Carbon</i> . 2012, 50(9): 3210-3228.	中国科学院金属研究所†	-	1 226
7	Xu Mingsheng*等. Graphene-Like Two-Dimensional Materials. <i>Chemical Reviews</i> . 2013, 113(5): 3766-3798.	浙江大学†	-	1 222
8	Hu Wenping*等. Semiconducting Pi-Conjugated Systems in Field-Effect Transistors: A Material Odyssey of Organic Electronics. <i>Chemical Reviews</i> , 2012, 112(4): 2208-2267.	中国科学院化学研究所†	-	1 213
9	Li Xingwei*等. C—C, C—O and C—N Bond Formation via Rhodium(III)-Catalyzed Oxidative C—H Activation. <i>Chemical Society Reviews</i> , 2012, 41(9): 3651-3678.	中国科学院大连化学物理研究所†	-	1 110
10	Li Jinghong*等. Graphene Oxide: Preparation, Functionalization, and Electrochemical Applications. <i>Chemical Reviews</i> , 2012, 112(11): 6027-6053.	清华大学†	-	1 097



表4 中国生物学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Lu Zhi等. An Integrated Encyclopedia of DNA Elements in the Human Genome. <i>Nature</i> , 2012, 489(7414): 57-74.	清华大学	是	4 389
2	Wang Jun等. An Integrated Map of Genetic Variation from 1,092 Human Genomes. <i>Nature</i> , 2012, 491(7422): 56-65.	深圳华大基因研究院	是	3 244
3	Lin Shuailiang等. Multiplex Genome Engineering Using CRISPR/Cas Systems. <i>Science</i> , 2013, 339(6121): 819-823.	清华大学	是	3 002
4	Bai Xueyuan等. Guidelines for the Use and Interpretation of Assays for Monitoring Autophagy. <i>Autophagy</i> , 2012, 8(4): 445-544.	中国人民解放军总医院	是	1 838
5	Shi Y.等. Molecular Definitions of Cell Death Subroutines: Recommendations of the Nomenclature Committee on Cell Death 2012. <i>Cell Death and Differentiation</i> , 2012, 19 (1): 107-120.	中国科学院上海生命科学研究院	是	1 029
6	Li Changbao等. The Tomato Genome Sequence Provides Insights into Fleshy Fruit Evolution. <i>Nature</i> , 2012, 485(7400): 635-641.	北京农林科学院蔬菜研究中心, 中国科学院国家基因研究中心	是	950
7	Qu Hongzhu等. The Accessible Chromatin Landscape of the Human Genome. <i>Nature</i> , 2012, 489(7414): 75-82.	中国科学院北京基因组研究所	是	869
8	Qu Hongzhu等. Systematic Localization of Common Disease-Associated Variation in Regulatory DNA. <i>Science</i> , 2012, 337(6099): 1190-1195.	中国科学院北京基因组研究所	是	858
9	Lam Tak-Wah*等. SOAPdenovo2: An Empirically Improved Memory-Efficient Short-Read <i>De Novo</i> Assembler. <i>GigaScience</i> , 2012, 1: 18.	香港大学†	-	772
10	Chan Raymond C.K.等. Biological Insights from 108 Schizophrenia-Associated Genetic Loci. <i>Nature</i> , 2014, 511(7510): 421-427.	中国科学院心理研究所	是	632



表5 中国医学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Wang Wenzhi等. Global and Regional Mortality from 235 Causes of Death for 20 Age Groups in 1990 and 2010: A Systematic Analysis for the Global Burden of Disease Study 2010. Lancet, 2012, 380(9859): 2095-2128.	首都医科大学	是	3 345
2	Kan Haidong等. A Comparative Risk Assessment of Burden of Disease and Injury Attributable to 67 Risk Factors and Risk Factor Clusters in 21 Regions, 1990-2010: A Systematic Analysis for the Global Burden of Disease Study 2010. Lancet, 2012, 380(9859): 2224-2260.	复旦大学	是	3 038
3	Phillips Michael R.等. Disability-Adjusted Life Years (DALYs) for 291 Diseases and Injuries in 21 Regions, 1990-2010: A Systematic Analysis for the Global Burden of Disease Study 2010. Lancet, 2012, 380(9859): 2197-2223.	上海交通大学	是	2 257
4	Ma Jixiang等. Years Lived with Disability (YLDs) for 1160 Sequelae of 289 Diseases and Injuries 1990-2010: A Systematic Analysis for the Global Burden of Disease Study 2010. Lancet, 2012, 380(9859): 2163-2196.	中国疾病预防控制中心	是	1 862
5	Li Yichong等. Global, Regional, and National Prevalence of Overweight and Obesity in Children and Adults During 1980-2013: A Systematic Analysis for the Global Burden of Disease Study 2013. Lancet, 2014, 384(9945): 766-781.	中国疾病预防控制中心慢性非传染性疾病预防控制中心	是	1 830
6	Wu Yilong等. Crizotinib Versus Chemotherapy in Advanced ALK-Positive Lung Cancer. New England Journal of Medicine, 2013, 368(25): 2385-2394.	广东省人民医院, 广东省肺癌研究所	是	1 229
7	Zhou Maigeng等. Global, Regional, and National Age-Sex Specific All-Cause and Cause-Specific Mortality for 240 Causes of Death, 1990-2013: A Systematic Analysis for the Global Burden of Disease Study 2013. Lancet, 2015, 385(9963): 117-171.	中国疾病预防控制中心慢性非传染性疾病预防控制中心	是	1 209
8	Shu Yuelong*等. Human Infection with a Novel Avian-Origin Influenza A (H7N9) Virus. New England Journal of Medicine, 2013, 368(20): 1888-1897.	中国疾病预防控制中心†	-	1 064
9	Ma J.等. Saxagliptin and Cardiovascular Outcomes in Patients with Type 2 Diabetes Mellitus. New England Journal of Medicine, 2013, 369(14): 1317-1326.	南京市第一医院	是	1 020
10	Wang Jun*等. A Metagenome-Wide Association Study of Gut Microbiota in Type 2 Diabetes. Nature, 2012, 490(7418): 55-60.	华大基因†	是	1 006



表6 中国农学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Li Shengting等. Analyses of Pig Genomes Provide Insight into Porcine Demography and Evolution. <i>Nature</i> , 2012, 491(7424), 393-398.	深圳华大基因研究院	是	431
2	Pan Genxing*等. Effects of Biochar Amendment on Soil Quality, Crop Yield and Greenhouse Gas Emission in a Chinese Rice Paddy: A Field Study of 2 Consecutive Rice Growing Cycles. <i>Field Crops Research</i> , 2012, 127: 153-160.	南京农业大学†	是	147
3	Zhang Fusuo*等. Producing More Grain with Lower Environmental Costs. <i>Nature</i> , 2014, 514(7523): 486-489.	中国农业大学†	是	138
4	Dai J.等. A Review of Earthworm Impact on Soil Function and Ecosystem Services. <i>European Journal of Soil Science</i> , 2013, 64(2): 161-182.	华南农业大学	是	129
5	Zhu Xia*等. Ammonia Oxidation Pathways and Nitrifier Denitrification Are Significant Sources of N ₂ O and NO Under Low Oxygen Availability. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110(16): 6328-6333.	中国科学院成都生物研究所†	是	128
6	Zhuang Jiangxing*等. Condensed Tannins from <i>Ficus Virens</i> as Tyrosinase Inhibitors: Structure, Inhibitory Activity and Molecular Mechanism. <i>PLoS One</i> , 2014, 9(3): 1-12.	厦门大学†	-	127
7	Liu Shusheng*等. Species Concepts as Applied to the Whitefly <i>Bemisia Tabaci</i> Systematics: How Many Species Are There?. <i>Journal of Integrative Agriculture</i> , 2012, 11(2): 176-186.	浙江大学†	是	120
8	Chu Haiyan*等. Soil pH Drives the Spatial Distribution of Bacterial Communities Along Elevation on Changbai Mountain. <i>Soil Biology & Biochemistry</i> , 2013, 57: 204-211.	中国科学院南京土壤研究所†	-	118
9	Pan Genxing*等. Effect of Biochar Amendment on Maize Yield and Greenhouse Gas Emissions from a Soil Organic Carbon Poor Calcareous Loamy Soil from Central China Plain. <i>Plant and Soil</i> , 2012, 351: 263-275.	南京农业大学†	-	114
10	Pan Genxing*等. Biochar's Effect on Crop Productivity and the Dependence on Experimental Conditions-A Meta-Analysis of Literature Data. <i>Plant and Soil</i> , 2013, 373: 583-594.	南京农业大学†	是	111



表7 中国地学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Cheng Hai等. IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0-50,000 Years cal BP. Radiocarbon, 2013, 55(4): 1869-1887.	西安交通大学	是	2 333
2	Zhang H.等. Bounding the Role of Black Carbon in the Climate System: A Scientific Assessment. Journal of Geophysical Research-Atmospheres, 2013, 118(11): 5380-5552.	中国气象局	是	1 037
3	Wang X.等. The Model of Emissions of Gases and Aerosols from Nature Version 2.1 (MEGAN2.1): An Extended and Updated Framework for Modeling Biogenic Emissions. Geoscientific Model Development, 2012, 5(6): 1471-1492.	中山大学	是	436
4	Fan Junxuan等. The ICS International Chronostratigraphic Chart. Episodes, 2013, 36(3): 199-204.	中国科学院南京地质古生物研究所	是	431
5	Sun B.等. Bedmap2: Improved Ice Bed, Surface and Thickness Datasets for Antarctica. Cryosphere, 2013, 7(1): 375-393.	中国极地研究所	是	409
6	Zhao Guochun*等. Precambrian Geology of China. Precambrian Research, 2012, 222(Si): 13-54.	香港大学†	是	332
7	Li Zhaoliang*等. Satellite-Derived Land Surface Temperature: Current Status and Perspectives. Remote Sensing of Environment, 2013, 131: 14-37.	中国科学院地理科学与资源研究所	是	305
8	Liu Zhengyu等. Global Warming Preceded by Increasing Carbon Dioxide Concentrations during the Last Deglaciation. Nature, 2012, 484(7392): 49-54.	北京大学	是	295
8	Zhu Di-Cheng*等. The Origin and Pre-Cenozoic Evolution of the Tibetan Plateau. Gondwana Research, 2013, 23(4): 1429-1454.	中国地质大学(北京)†	是	295
10	Xiao Wenjiao*等. Paleozoic Multiple Accretionary and Collisional Tectonics of the Chinese Tianshan Orogenic Collage. Gondwana Research, 2013, 23(4): 1316-1341.	中国科学院新疆生态与地理研究所, 中国科学院地质与地球物理研究所	是	289



表8 中国环境科学领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Wang Dan*等. Recent Advances in Micro-/Nano-Structured Hollow Spheres for Energy Applications: From Simple to Complex Systems. <i>Energy & Environmental Science</i> , 2012, 5(2): 5604-5618.	中国科学院过程工程研究所†, 哈尔滨工业大学	-	568
2	Cao Junji*等. High Secondary Aerosol Contribution to Particulate Pollution during Haze Events in China. <i>Nature</i> , 2014, 514(7521): 218-222.	中国科学院地球环境研究所†	是	522
3	Zeng Guangming*等. Use of Iron Oxide Nanomaterials in Wastewater Treatment: A Review. <i>Science of the Total Environment</i> , 2012, 424: 1-10.	湖南大学†	-	485
4	Zhang Fusuo*等. Enhanced Nitrogen Deposition over China. <i>Nature</i> , 2013, 494(7438): 459-462.	中国农业大学†	是	435
5	Xie Shangping*等. Recent Global-Warming Hiatus Tied to Equatorial Pacific Surface Cooling. <i>Nature</i> , 2013, 501(7467): 403-407.	中国海洋大学	是	431
6	Zhang Jian等. A Review on the Occurrence of Micropollutants in the Aquatic Environment and Their Fate and Removal during Wastewater Treatment. <i>Science of the Total Environment</i> , 2014, 473-474: 619-641.	山东大学	是	416
7	Zhang Ming等. Biochar as a Sorbent for Contaminant Management in Soil and Water: A Review. <i>Chemosphere</i> , 2014, 99: 19-33.	中国计量大学	是	413
8	Yao Tandong*等. Different Glacier Status with Atmospheric Circulations in Tibetan Plateau and Surroundings. <i>Nature Climate Change</i> , 2012, 2(9): 663-667.	中国科学院青藏高原研究所 (北京) †, 中国科学院冰冻圈科学国家重点实验室 (兰州)	是	382
9	Zhu Yongguan*等. Diverse and Abundant Antibiotic Resistance Genes in Chinese Swine Farms. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110(9): 3435-3440.	中国科学院城市环境研究所†	是	309
10	Tao F.等. Uncertainty in Simulating Wheat Yields under Climate Change. <i>Nature Climate Change</i> , 2013, 3(9): 827-832.	中国科学院地理科学与资源研究所	是	301



表9 中国工程技术领域热点论文(2012-2016年)

序号	论文题目	作者机构	是否合作	被引频次
1	Chen Xianhui*等. Black Phosphorus Field-Effect Transistors. Nature Nanotechnology, 2014, 9(5): 372-377.	中国科学技术大学†	-	1 556
2	Ding Xiaojian等. Extreme Learning Machine for Regression and Multiclass Classification. IEEE Transactions on Systems Man and Cybernetics Part B-Cybernetics, 2012, 42(2): 513-529.	西安交通大学	是	1 171
3	Ma Wei*等. Aggregation and Morphology Control Enables Multiple Cases of High-Efficiency Polymer Solar Cells. Nature Communications, 2014, 5: 5293.	西安交通大学†	是	1 163
4	Deng Li等. Deep Neural Networks for Acoustic Modeling in Speech Recognition. IEEE Signal Processing Magazine, 2012, 29(6): 82-97.	香港科技大学	是	1 106
5	Cui Xiaodong*等. Valley Polarization in MoS ₂ Monolayers by Optical Pumping. Nature Nanotechnology, 2012, 7(8): 490-493.	香港大学†	是	1 099
6	Liu Jinping*等. Recent Advances in Metal Oxide-Based Electrode Architecture Design for Electrochemical Energy Storage. Advanced Materials, 2012, 24(38): 5166-5180.	华中师范大学†	是	1 076
7	Kang Zhenhui*等. Carbon Nanodots: Synthesis, Properties and Applications. Journal of Materials Chemistry, 2012, 22(46): 24230-24253.	苏州大学†	-	917
8	Tang Fangqiong*等. Mesoporous Silica Nanoparticles: Synthesis, Biocompatibility and Drug Delivery. Advanced Materials, 2012, 24(12): 1504-1534.	中国科学院理化技术研究所†	-	839
9	Fan Zhuangjun*等. Advanced Asymmetric Supercapacitors Based on Ni(OH) ₂ /Graphene and Porous Graphene Electrodes with High Energy Density. Advanced Functional Materials, 2012, 22(12): 2632-2641.	哈尔滨工程大学†	-	771
10	Wei Fei等. An Oxygen Reduction Electrocatalyst Based on Carbon Nanotube-Graphene Complexes. Nature Nanotechnology, 2012, 7(6): 394-400.	清华大学	是	719