中国热点论文榜

中国科学院文献情报中心科学计量中心

"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2014－2018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（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Wang Lin*等. The strong convergence theorems for split common fixed point problem of asymptotically nonexpansive mappings in Hilbert spaces. Journal of Inequalities and Applications, 2015	云南财经大学†	450
2	Zhang Ziheng*等. Periodic solutions for a singular damped differential equation. Boundary Value Problems, 2015	天津工业大学†	212
3	Tian Wenyi*等. A class of second order difference approximations for solving space fractional diffusion equations. Mathematics of Computation, 2015, 84(294), 1703-1727.	兰州大学†	183
4	Zheng Liancun*等. Coupled flow and heat transfer in viscoelastic fluid with Cattaneo-Christov heat flux model. Applied Mathematics Letters, 2014, 38, 87-93.	北京科技大学†	175
5	Ma Wenxiu等. Lump solutions to nonlinear partial differential equations via Hirota bilinear forms. Journal of Differential Equations, 2018, 264(4), 2633-2659.	浙江师范大学，山东科技大学，上海电力学院	169
6	Zhang Jinhui*等. The global dynamics of a class of nonlinear vector fields in $\mathbb{R}^3$. Electronic Journal of Qualitative Theory of Differential Equations, 2014, (50), 1-15.	中原工学院†	166
7	Shi Wei*等. Extra: an exact first-order algorithm for decentralized consensus optimization. SIAM Journal on Optimization, 2015, 25(2), 944-966.	中国科学技术大学†	154
8	Liu Lishan*等. Extremal solutions for p-Laplacian fractional integro-differential equation with integral conditions on infinite intervals via iterative computation. Advances in Difference Equations, 2015	曲阜师范大学†	146
9	Li Gongbao*等. Existence of positive ground state solutions for the nonlinear Kirchhoff type equations in $\mathbb{R}^3$. Journal of Differential Equations, 2014, 257(2), 566-600.	华中师范大学†	142
10	Ye Zhisheng*等. The inverse Gaussian process as a degradation model. Technometrics, 2014, 56(3), 302-311.	香港理工大学†	142
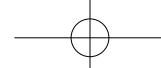
表2　中国物理学领域热点论文（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Ji Wei*等. High-mobility transport anisotropy and linear dichroism in few-layer black phosphorus. Nature Communications, 2014, 5.	中国人民大学†	1678
2	Wu Hongbin*等. Single-junction polymer solar cells with high efficiency and photovoltage. Nature Photonics, 2015, 9(3), 174-179.	华南理工大学†	1213
3	Qian T*, Ding H*等. Experimental discovery of Weyl semimetal TaAs. Physical Review X, 2015, 5(3).	中国科学院物理研究所†	1070
4	Weng Hongming*等. Weyl semimetal phase in noncentrosymmetric transition-metal monophosphides. Physical Review X, 2015, 5(1).	中国科学院物理研究所†	923
5	Jin Yizheng*, Peng Xiaogang*等. Solution-processed, high-performance light-emitting diodes based on quantum dots. Nature, 2014, 515(7525), 96-99.	浙江大学†	789
6	Yang Bai*等. The photoluminescence mechanism in carbon dots (graphene quantum dots, carbon nanodots, and polymer dots): current state and future perspective. Nano Research, 2015, 8(2), 355-381.	吉林大学†	727
7	Dong Fan*等. Graphitic carbon nitride based nanocomposites: a review. Nanoscale, 2015, 7(1), 15-37.	重庆工商大学†	704
8	Chen Genfu*等. Observation of the chiral-anomaly-induced negative magnetoresistance in 3D Weyl semi-metal TaAs. Physical Review X, 2015, 5(3).	中国科学院物理研究所†, 量子物质科学协同创新中心†	642
9	Zhao Lidong*等. Ultrahigh power factor and thermoelectric performance in hole-doped single-crystal SnSe. Science, 2016, 351(6269), 141-144.	北京航空航天大学†	626
10	Zhang H等. Molybdenum disulfide (MoS_2) as a broadband saturable absorber for ultra-fast photonics. Optics Express, 2014, 22(6), 7249-7260.	深圳大学	589

注：1 中国作者定义：指论文中标注了中国机构的作者，可能包含来华访问的外国人。
　　2 作者统计口径：为突出中国作者的贡献，排行榜的论文均为中国作者作为通讯作者或第一作者的论文。如果中国作者为通讯作者，以*表示。
　　3 作者机构：排行榜中只标注了作者所属的中国机构；通讯作者所在机构以†表示。
　　4 统计时间窗：2014－2018年。
　　5 数据下载时间：2019年8月9日。
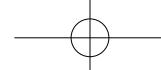
表3 中国化学领域热点论文（2014－2018年）

| 序号	论文题目	作者机构	被引频次
1	Tang Benzhong*等. Aggregation-induced emission: together we shine, united we soar!. Chemical Reviews, 2015, 115(21), 11718-11940.	香港科技大学深圳研究院†	2037
2	Liu Hong*等. Fluorine in pharmaceutical industry: fluorine-containing drugs introduced to the market in the last decade (2001-2011). Chemical Reviews, 2014, 114(4), 2432-2506.	中国科学院上海药物研究所†	1733
3	Kang Zhenhui*, Lee Shuittong*, Lifshitz Yeshayahu*等. Metal-free efficient photocatalyst for stable visible water splitting via a two-electron pathway. Science, 2015, 347(6225), 970-974.	苏州大学†	1661
4	Zhang Yu*等. Noble metal-free hydrogen evolution catalysts for water splitting. Chemical Society Reviews, 2015, 44(15), 5148-5180.	北京航空航天大学†	1593
5	Han Hongwei*等. A hole-conductor-free, fully printable mesoscopic perovskite solar cell with high stability. Science, 2014, 345(6194), 295-298.	华中科技大学†	1567
6	Lu Lehui*等. Polydopamine and its derivative materials: synthesis and promising applications in energy, environmental, and biomedical fields. Chemical Reviews, 2014, 114(9), 5057-5115.	中国科学院长春应用化学研究所†	1528
7	Zhang Li*, Su Chengyong等. Applications of metal-organic frameworks in heterogeneous supramolecular catalysis. Chemical Society Reviews, 2014, 43(16), 6011-6061.	中山大学†	1447
8	Zhang Lisha*, Liu Jianshe*, Wang Xinchen*等. Semiconductor heterojunction photocatalysts: design, construction, and photocatalytic performances. Chemical Society Reviews, 2014, 43(15), 5234-5244.	东华大学†, 东华大学†, 福州大学†	1244
9	Chen Chen等. Highly crystalline multimetallic nanoframes with three-dimensional electrocatalytic surfaces. Science, 2014, 343(6177), 1339-1343.	清华大学	1193
10	Sun Xuping*等. Self-supported nanoporous cobalt phosphide nanowire arrays: an efficient 3D hydrogen-evolving cathode over the wide range of pH 0-14. Journal of the American Chemical Society, 2014, 136(21), 7587-7590.	中国科学院长春应用化学研究所†	1189
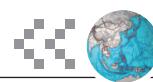
表4 中国生物学领域热点论文（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Chang Christopher C.*等. Second-generation plink: rising to the challenge of larger and richer datasets. Gigascience, 2015, 4.	华大基因实验室†	1122
2	Qu Lianghu*, Yang Jianhua*等. starBase V2.0: decoding miRNA-ceRNA, miRNA-ncRNA and protein-RNA interaction networks from large-scale CLIP-Seq data. Nucleic Acids Research, 2014, 42(D1), D92-D97.	中山大学†	759
3	Sun Shuhan*等. A long noncoding RNA activated by TGF-beta promotes the invasion-metastasis cascade in hepatocellular carcinoma. Cancer Cell, 2014, 25(5), 666-681.	第二军医大学†	728
4	Gao Ge*等. GSDS 2.0: an upgraded gene feature visualization server. Bioinformatics, 2015, 31(8), 1296-1297.	北京大学†	624
5	Shan Ge*等. Exon-intron circular RNAs regulate transcription in the nucleus. Nature Structural & Molecular Biology, 2015, 22(3), 256-264.	中国科学技术大学†	573
6	Yu Faxing*等. Hippo pathway in organ size control, tissue homeostasis, and cancer. Cell, 2015, 163(4), 811-828.	复旦大学†	523
7	Sha Jiahao*, Ji Weizhi*, Huang Xingxu*等. Generation of gene-modified cynomolgus monkey via CAS9/RNA-mediated gene targeting in one-cell embryos. Cell, 2014, 156(4), 836-843.	南京医科大学†, 云南中科灵长类生物医学重点实验室†, 南京大学†	523
8	Zhang Tianzhen*, Chen Z. Jeffrey*, Li Ruiqiang*, Guo Wangzhen*等. Sequencing of allotetraploid cotton (Gossypium hirsutum L. acc. TM-1) provides a resource for fiber improvement. Nature Biotechnology, 2015, 33(5), 531-537.	南京农业大学†, 南京农业大学†, 北京Novogene生物信息研究所†, 南京农业大学†	497
9	Gao Caixia*, Qiu Jinlong*等. Simultaneous editing of three homoeoalleles in hexaploid bread wheat confers heritable resistance to powdery mildew. Nature Biotechnology, 2014, 32(9), 947-951.	中国科学院遗传与发育生物学研究所†, 中国科学院微生物研究所†	486
10	He Xianghuo*, Huang Shenglin*等. Circular RNA profiling reveals an abundant circHIPK3 that regulates cell growth by sponging multiple miRNAs. Nature Communications, 2016, 7.	复旦大学†	484
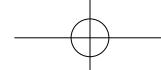
表5　中国医学领域热点论文（2014－2018年）

| 序号	论文题目	作者机构	被引频次
1	He Jie*等. Cancer statistics in China, 2015. CA-A Cancer Journal for Clinicians, 2016, 66(2), 115-132.	国家癌症中心†	5530
2	Liu Jianhua*, Shen Jianzhong*等. Emergence of plasmid-mediated colistin resistance mechanism MCR-1 in animals and human beings in China: a microbiological and molecular biological study. Lancet Infectious Diseases, 2016, 16(2), 161-168.	华南农业大学†，中国农业大学†	1468
3	Wu Yilong*等. Afatinib versus cisplatin plus gemcitabine for first-line treatment of Asian patients with advanced non-small-cell lung cancer harbouring EGFR mutations (LUX-Lung 6): an open-label, randomised phase 3 trial. Lancet Oncology, 2014, 15(2), 213-222.	广东省医学科学院&广东省人民医院广东省肺癌研究所†	882
4	Mok Tony S*等. Osimertinib or platinum-pemetrexed in EGFR T790m-positive lung cancer. New England Journal of Medicine, 2017, 376(7), 629-640.	香港中文大学†	711
5	Shao Feng*等. Cleavage of GSDMD by inflammatory caspases determines pyroptotic cell death. Nature, 2015, 526(7575), 660-665.	北京生命科学研究所†	640
6	Tong Tiejun*等. Estimating the sample mean and standard deviation from the sample size, median, range and/or interquartile range. BMC Medical Research Methodology, 2014, 14.	香港浸会大学†	616
7	Shao Feng*等. Inflammatory caspases are innate immune receptors for intracellular LPS. Nature, 2014, 514(7521), 187-192.	北京生命科学研究所†	522
8	Wang Xia等. Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies. BMJ-British Medical Journal, 2014, 349.	山东大学，华中科技大学	518
9	Fan Lei等. Breast cancer in China. Lancet Oncology, 2014, 15(7), E279-E289.	复旦大学	486
10	Li Lanjuan*, Zheng Shusen*等. Alterations of the human gut microbiome in liver cirrhosis. Nature, 2014, 513(7516), 59-64.	浙江大学†	475
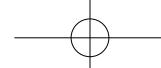
表6　中国农业科学领域热点论文（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Zhang Yanqing*, Yan Changrong*等. Priming effect of ^{13}C-labelled wheat straw in no-tillage soil under drying and wetting cycles in the Loess Plateau of China. Scientific Reports, 2015, 5, 13826.	中国农业科学院农业环境与可持续发展研究所†, 农业部旱作农业重点实验室†	512
2	Zhang Fusuo*等. Producing more grain with lower environmental costs. Nature, 2014(7523), 514, 486-489.	中国农业大学†	344
3	Wang Jiankang*等. QTL IciMapping: Integrated software for genetic linkage map construction and quantitative trait locus mapping in biparental populations. Crop Journal, 2015, 3(3), 269-283.	中国农业科学院作物研究所†	222
4	Nishinari Katsuyoshi*, Fang Yapeng*等. Soy proteins: a review on composition, aggregation and emulsification. Food Hydrocolloids, 2014, 39, 301-318.	湖北工业大学†	212
5	Wang Shujun*, Wang Shuo*等. Starch retrogradation: a comprehensive review. Comprehensive Reviews in Food Science and Food Safety, 2015, 14(5), 568-585.	天津科技大学†	202
6	Li Huabin*等. Resources and biological activities of natural polyphenols. Nutrients, 2014, 6(12), 6020-6047.	中山大学†	191
7	Sun Dawen*等. Recent advances in wavelength selection techniques for hyperspectral image processing in the food industry. Food and Bioprocess Technology, 2014, 7(2), 307-323.	华南理工大学†	175
8	Zhuang Jiangxing*, Chen Qingxi*等. Condensed tannins from Ficus virens as tyrosinase inhibitors: structure, inhibitory activity and molecular mechanism. PLoS One, 2014, 9(3), 512-523.	厦门大学†	163
9	Wang Jinyang*等. Biochar stability in soil: meta analysis of decomposition and priming effects. Global Change Biology Bioenergy, 2016, 8(3), 512–523.	南京农业大学†	160
10	Xu Jianguo*等. Chemical composition, antibacterial activity and mechanism of action of essential oil from seeds of fennel (Foeniculum vulgare mill.). Food Control, 2014, 35(1), 109-116.	山西师范大学†	158
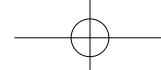
表7　中国地学领域热点论文（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Chen Yushi*等. Deep learning-based classification of hyperspectral data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2014, 7(6), 2094-2107.	哈尔滨工业大学†	504
2	Chen Jun*等. Global land cover mapping at 30 m resolution: a POK-based operational approach. ISPRS Journal of Photogrammetry and Remote Sensing, 2015, 103, 7-27.	国家基础地理信息中心†	442
3	Kroener A*等. Reassessment of continental growth during the accretionary history of the central Asian orogenic belt. Gondwana Research, 2014, 25(1), 103-125.	中国地质科学院北京离子探针中心†	386
4	Liu Jiyuan*等. Spatiotemporal characteristics, patterns, and causes of land-use changes in China since the late 1980s. Journal of Geographical Sciences, 29014, 24(2), 195-210.	中国科学院地理科学与资源研究所†	375
5	Fu Qiaomei*等. Genome sequence of a 45,000-year-old modern human from western Siberia. Nature, 2014, 514(7523), 445–449.	中国科学院古脊椎动物与古人类研究所†	336
6	Zhang Liangpei*等. Deep learning for remote sensing data: a technical tutorial on the state of the art. IEEE Geoscience and Remote Sensing Magazine, 2016, 4(2), 22-40.	武汉大学†	322
7	Han Junwei*等. Learning rotation-invariant convolutional neural networks for object detection in VHR optical remote sensing images. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54(12), 7405-7415.	西北工业大学†	311
8	Chen Yushi*等. Deep feature extraction and classification of hyperspectral images based on convolutional neural networks. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54(10), 6232-6251.	哈尔滨工业大学	311
9	Wang Jian*, Wang Jun*, Rasmus Nielsen*等. Altitude adaptation in Tibetans caused by introgression of Denisovan-like DNA. Nature, 2014, 512(7513), 194-197.	华大基因†, 沃森基因组科学研究院†; 澳门科技大学†, 香港大学†	304
10	Xiao Wenjiao*等. The western central Asian orogenic belt: a window to accretionary orogenesis and continental growth. Gondwana Research, 2014, 25(4), 1429-1444.	中国科学院新疆生态与地理研究所†	294
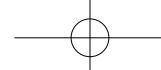
表8　中国环境科学领域热点论文（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Cao Junji*等. High secondary aerosol contribution to particulate pollution during haze events in China. Nature, 2014, 514(7521), 218-222.	中国科学院地球环境研究所†	1303
2	Huang Lei*等. A review of soil heavy metal pollution from mines in China: Pollution and health risk assessment. Science of the Total Environment, 2014, 468/469, 843-853.	南京大学†	725
3	Ying Guangguo*等. Comprehensive evaluation of antibiotics emission and fate in the river basins of China: Source analysis, multimedia modeling, and linkage to bacterial resistance. Environmental Science & Technology, 2015, 49(11), 6772-6782.	中国科学院广州地球化学研究所†	659
4	Cai Wenju等. Increasing frequency of extreme EL Nino events due to greenhouse warming. Nature Climate Change, 2014, 4(2), 111-116.	中国海洋大学	645
5	Zhang Renyi*, Hu Min*等. Elucidating severe urban haze formation in China. Proceedings of the National Academy of Sciences of the United States of America. 2014, 111(49), 17373-17378.	北京大学†	560
6	Wang Qiang*, Zhong Ziyi*等. Recent advances in solid sorbents for CO_2 capture and new development trends. Energy & Environmental Science, 2014, 7(11), 3478-3518.	北京林业大学†	443
7	Liu Yunguo*等. Application of biochar for the removal of pollutants from aqueous solutions. Chemosphere, 2015, 125, 70-85.	湖南大学†	424
8	Wang Wei*等. The decomposition of fine and coarse roots: their global patterns and controlling factors. Scientific Reports, 2015, 5, 9940.	北京大学†	408
9	Yu Hanqing*等. Towards sustainable waste water treatment by using microbial fuel cells-centered technologies. Energy & Environmental Science, 2014, 7(3), 911-924.	中国科学技术大学†	390
10	He Yiming等. New application of Z-scheme Ag_3PO_4/g-C_3N_4 composite in converting CO_2 to fuel. Environmental Science & Technology, 2015, 49(1), 649-656.	浙江师范大学	376
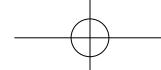
表9 中国工程技术领域热点论文（2014－2018年）

序号	论文题目	作者机构	被引频次
1	Ren Shaoqing*等. Faster R-CNN: towards real-time object detection with region proposal networks. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2017, 39(6), 1137-1149.	中国科学技术大学†	3366
2	Chen Xianhui*, Zhang Yuanbo*等. Black phosphorus field-effect transistors. Nature Nanotechnology, 2014, 9(5), 372-377.	中国科学技术大学†, 复旦大学†	3365
3	Yan He*等. Aggregation and morphology control enables multiple cases of high-efficiency polymer solar cells. Nature Communications, 2014, 5, 5293.	香港科技大学†	1995
4	Zhang Yong*等. Microstructures and properties of high-entropy alloys. Progress in Materials Science, 2014, 61, 1-93.	北京科技大学†	1306
5	Yan He*, Ma Wei*等. Efficient organic solar cells processed from hydrocarbon solvents. Nature Energy, 2016, 1, 15027.	香港科技大学†, 西安交通大学†	1251
6	Tang Benzhong*等. Aggregation-induced emission: the whole is more brilliant than the parts. Advanced Materials, 2014, 26(31), 5429-5479.	香港科技大学†	1237
7	Yu Jiaguo*等. Polymeric photocatalysts based on graphitic carbon nitride. Advanced Materials, 2015, 27(13), 2150-2176.	武汉理工大学†	1224
8	Zhan Xiaowei*等. An electron acceptor challenging fullerenes for efficient polymer solar cells. Advanced Materials, 2015, 27(7), 1170-1174.	北京大学†	1113
9	Han Liyuan*等. Efficient and stable large-area perovskite solar cells with inorganic charge extraction layers. Science, 2015, 350(6263), 944-948.	上海交通大学	1054
10	Xu Lida*等. Internet of things in industries: a survey. IEEE Transactions on Industrial Informatics, 2014, 10(4), 2233-2243.	中国科学院计算技术研究所†	1031