

基于事实型数据的世界一流 大学和一流学科建设

何薇 分析师

2016年



我国启动高校“双一流”建设战略



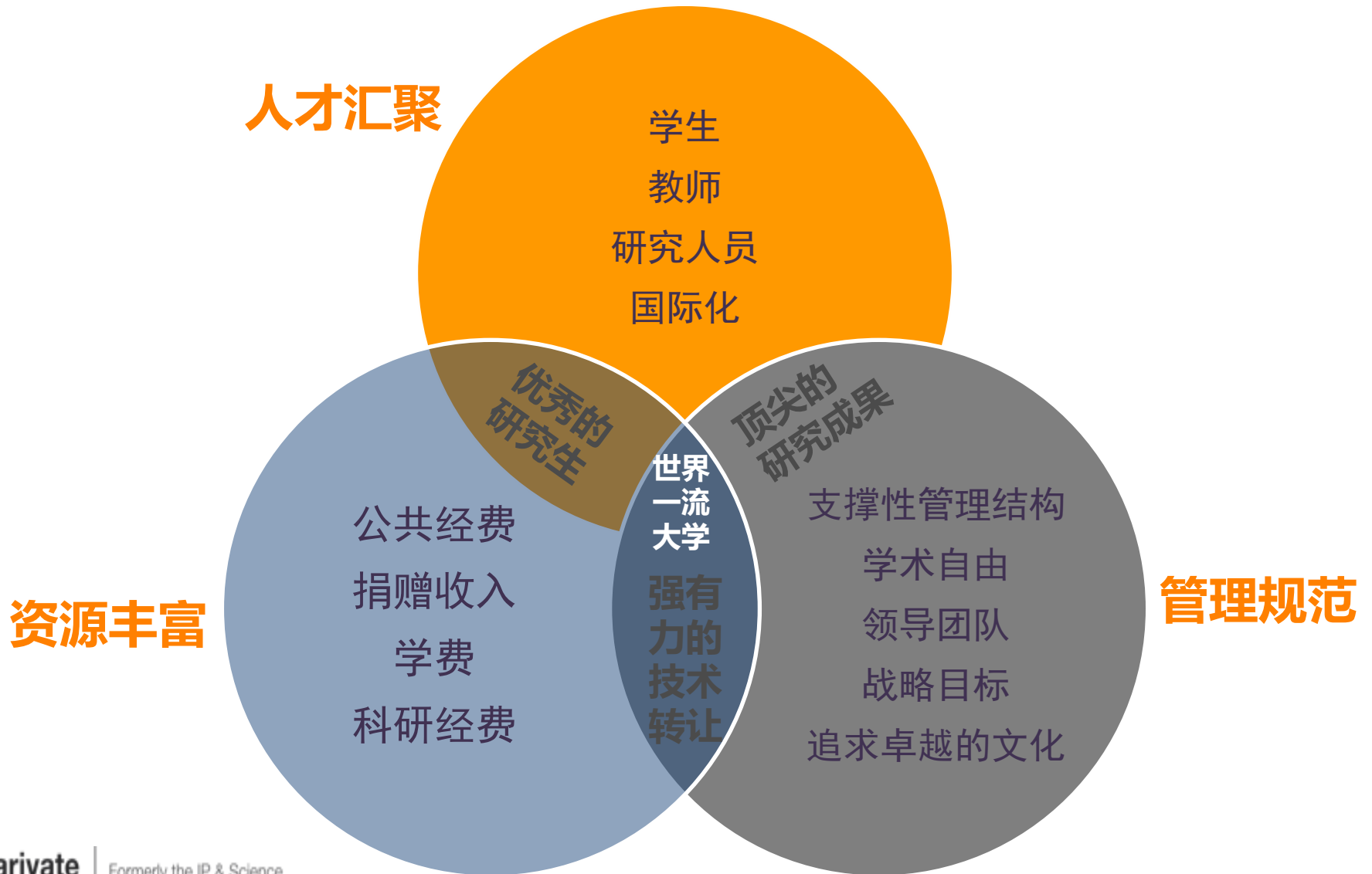
— **“EVERYONE WANTS ONE, NO ONE KNOWS WHAT IT IS, AND NO ONE KNOWS HOW TO GET ONE.”**

PHILIP G. ALTBACH

提纲

- 世界一流大学的特点和核心要素
- 世界一流大学和一流学科的竞争力解读
- 利用事实数据助力高校双一流的建设
 - 开展深入学科分析、优化学科布局
 - 跟踪研究前沿、探寻潜力研究方向
 - 遴选国际合作伙伴、提升国际影响力
 - 定位高影响力人才、产出一流的学术研究
 - 分析基金资助论文的引文影响力
 - 推广学术研究成果、加速全球影响力的提升
- 一流的学术研究需要一流的学术信息

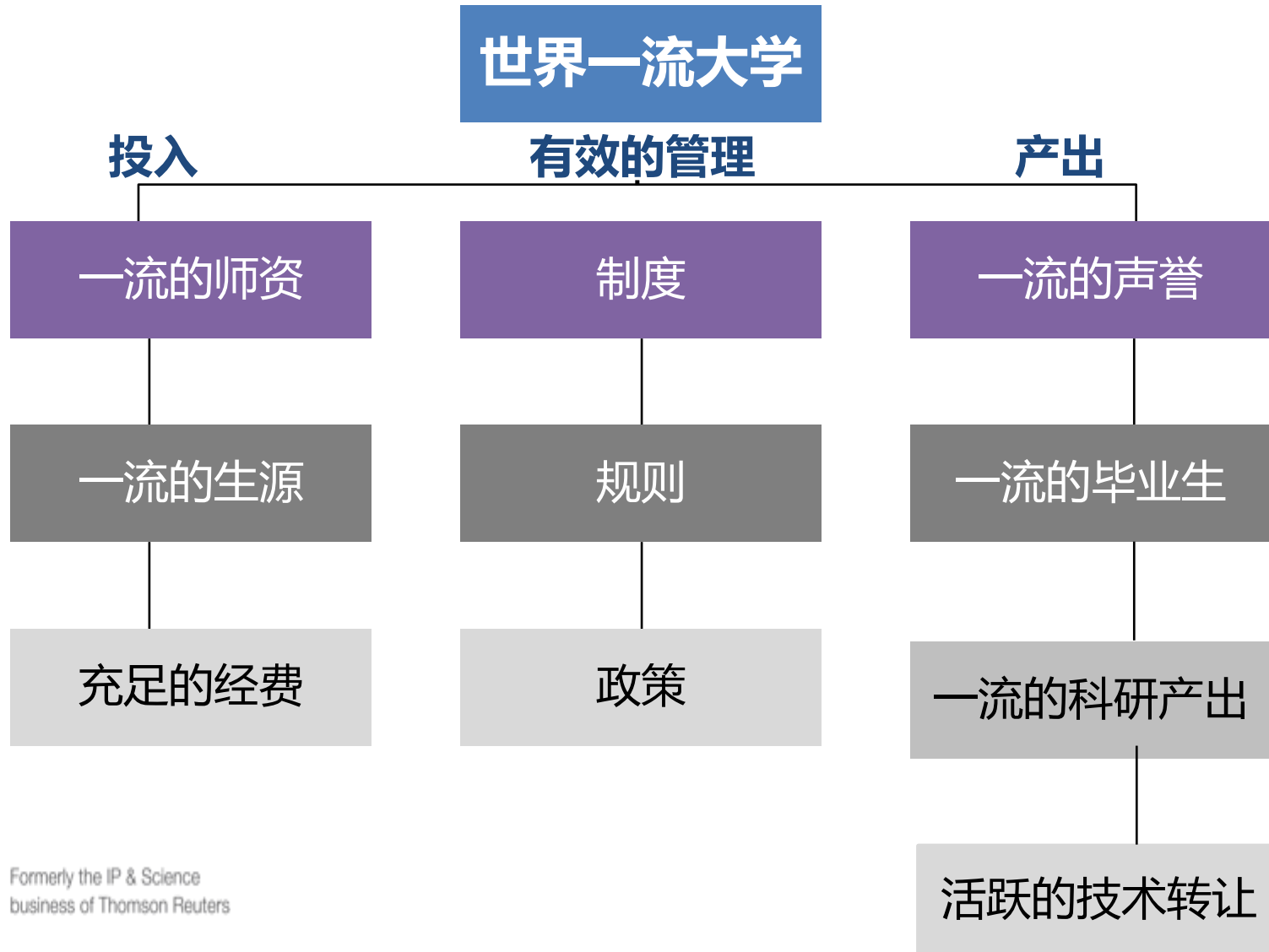
世界一流大学的特点和核心要素



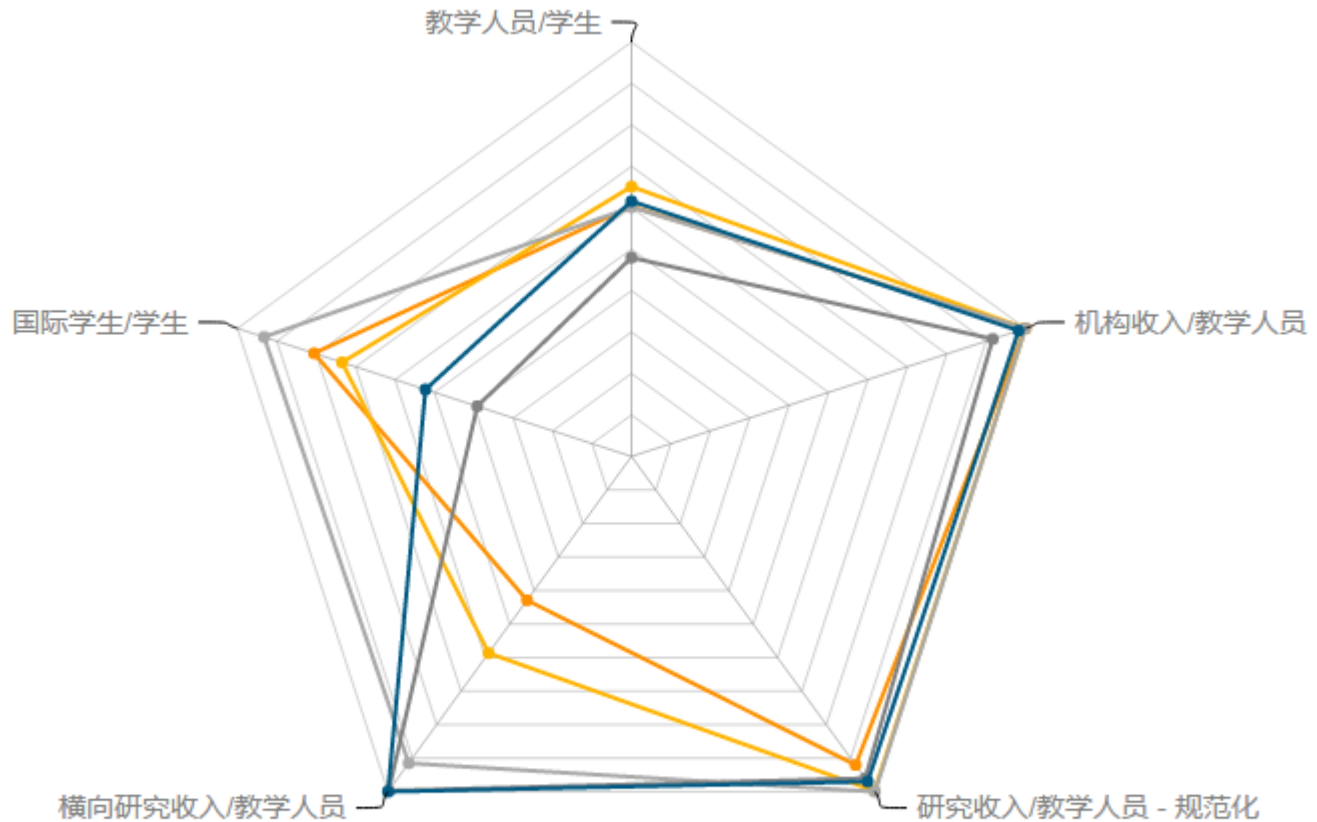
世界一流大学的特征



世界一流大学的竞争力解读

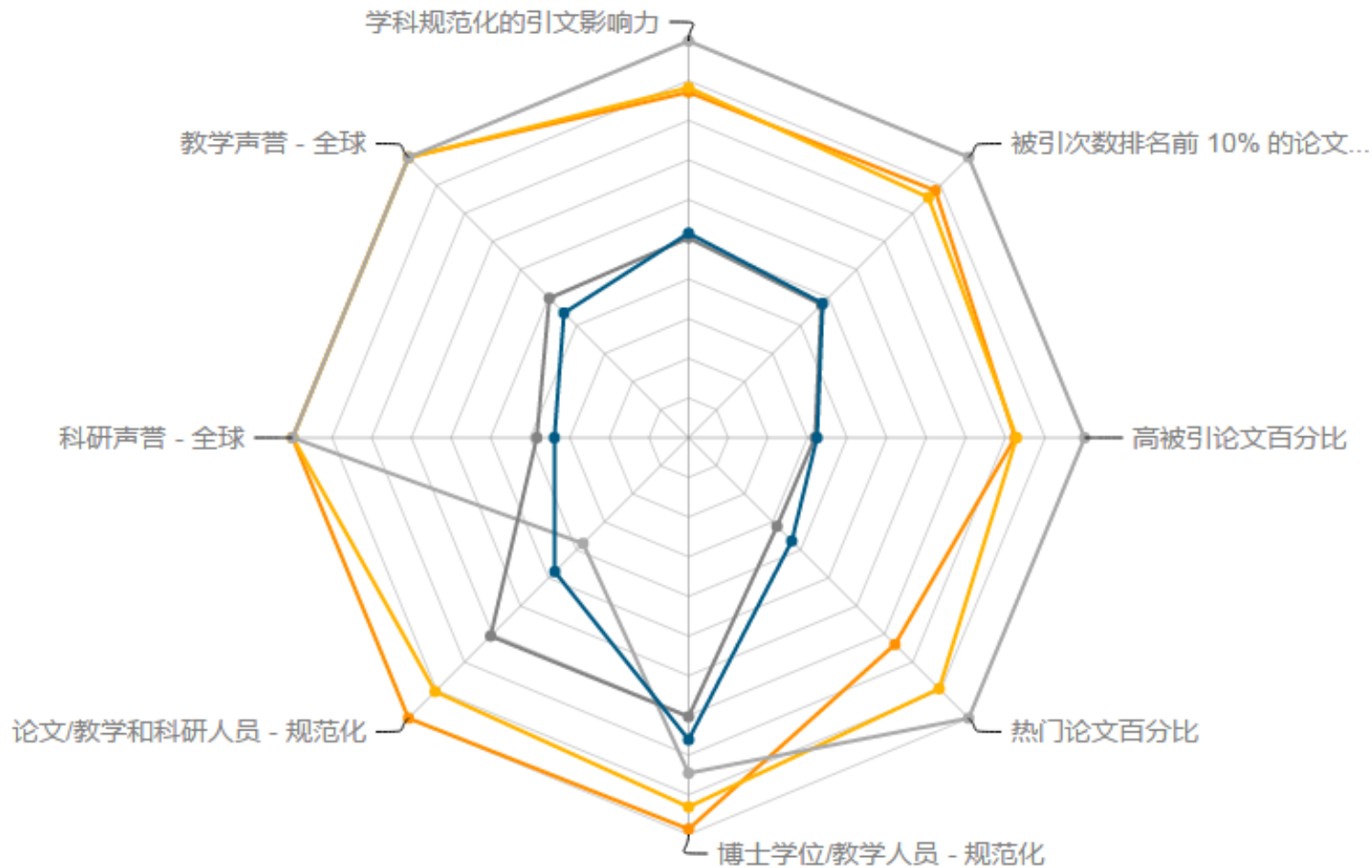


世界一流大学的竞争力解读-投入



Harvard University | Stanford University | Massachusetts Institute of Technology (MIT)
Tsinghua University | Peking University

世界一流大学的竞争力解读-产出





ASSOCIATION OF AMERICAN UNIVERSITIES

An association of 62 leading research universities in the United States & Canada



AAU INSTITUTIONS

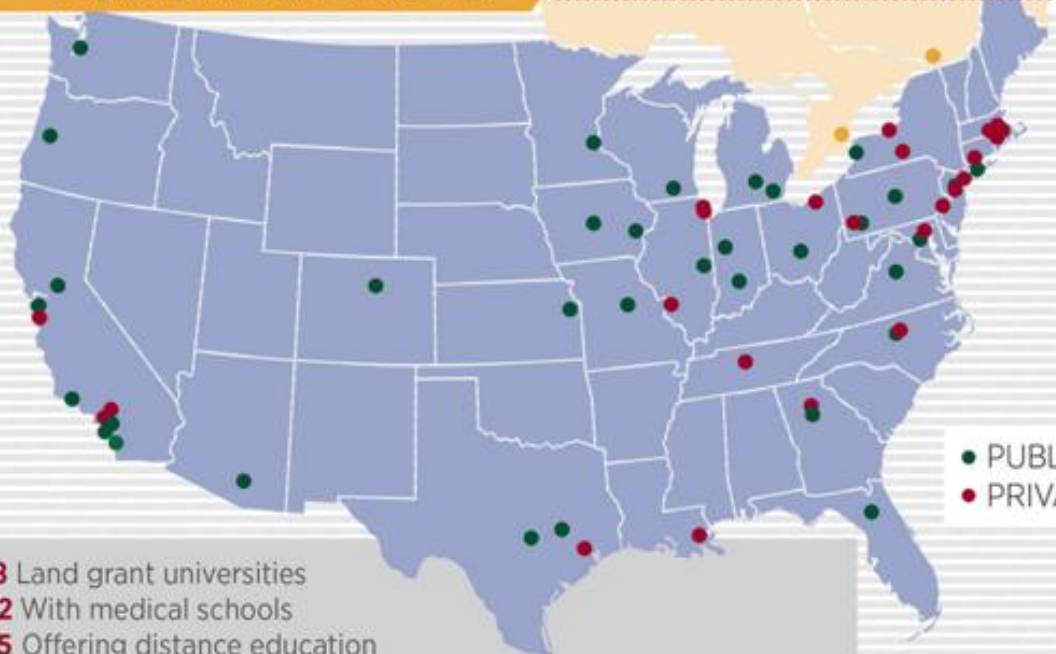
34 PUBLIC UNIVERSITIES

26 PRIVATE UNIVERSITIES

2 CANADIAN UNIVERSITIES

62 MEMBER UNIVERSITIES

IN **28** STATES & **2** PROVINCES



● PUBLIC
● PRIVATE

18 Land grant universities

42 With medical schools

55 Offering distance education

49 Offering teacher certification programs

13 With international branch campuses

Clarivate Analytics

Formerly the IP & Science business of Thomson Reuters

AAU成员评审指标

联邦科研经费(NSF ; 农业
食品与研究计划AFRI)

院士数量 (科学院、工程院
、医学研究院)

教师获奖情况

科研表现 (产出与影响力)

SCHOLARLY
OUTPUT

1.3 MILLION
PUBLICATIONS

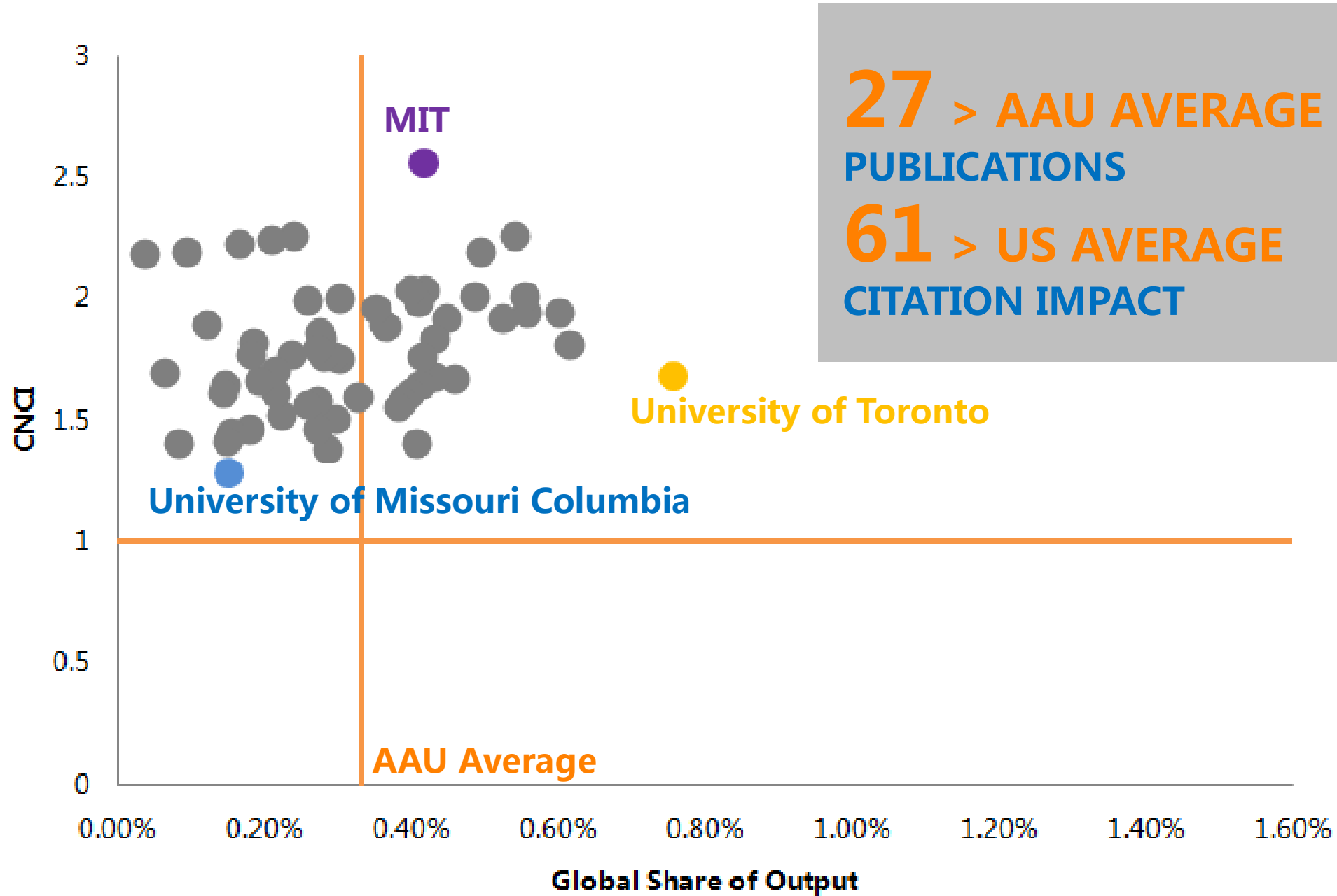
15.0 MILLION
CITATIONS

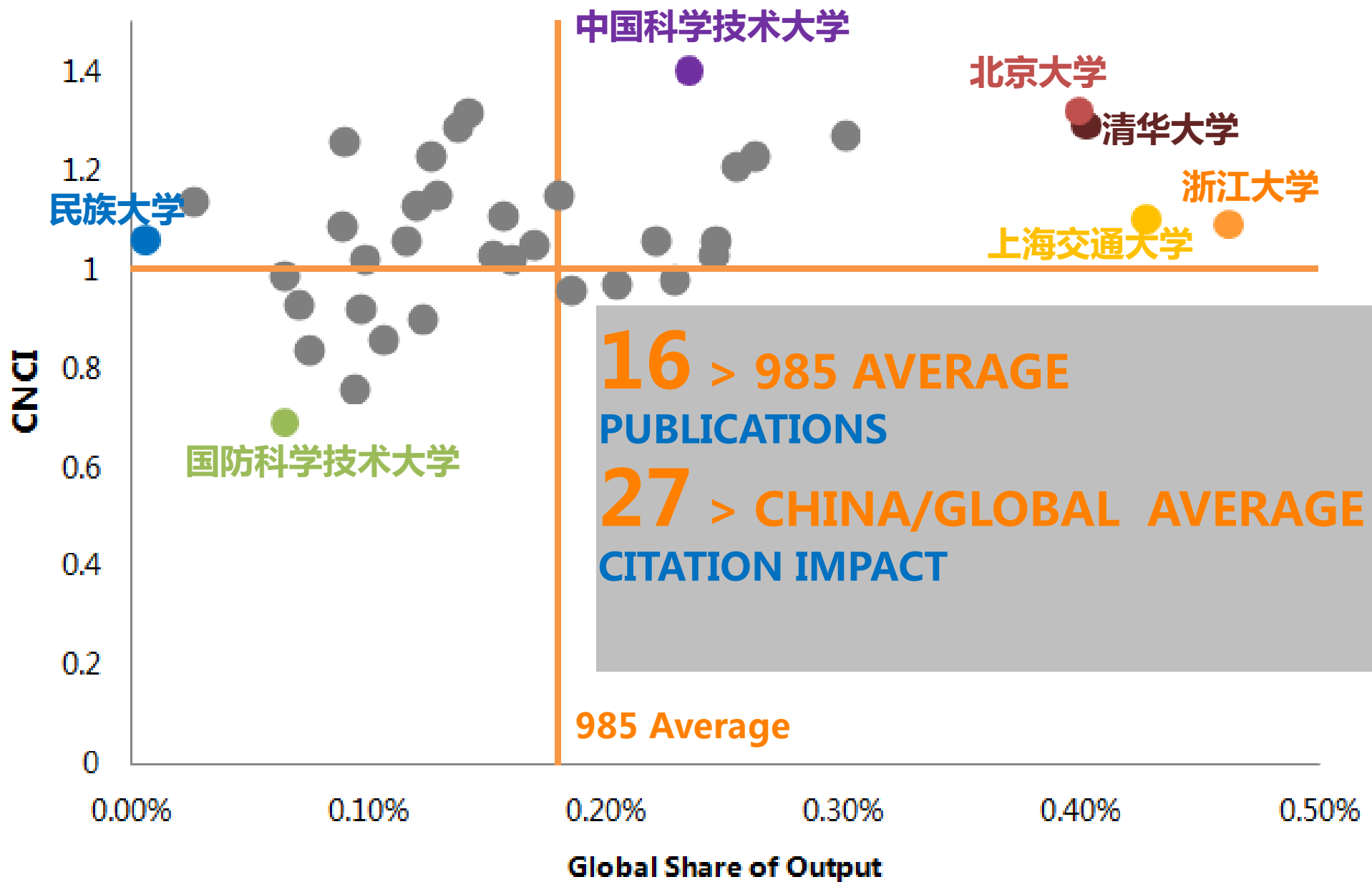
SOURCE for 2010-2014
Thomson-Reuters InCites

125,600
BOOKS

SOURCE FOR 2014 *Academic Analytics*



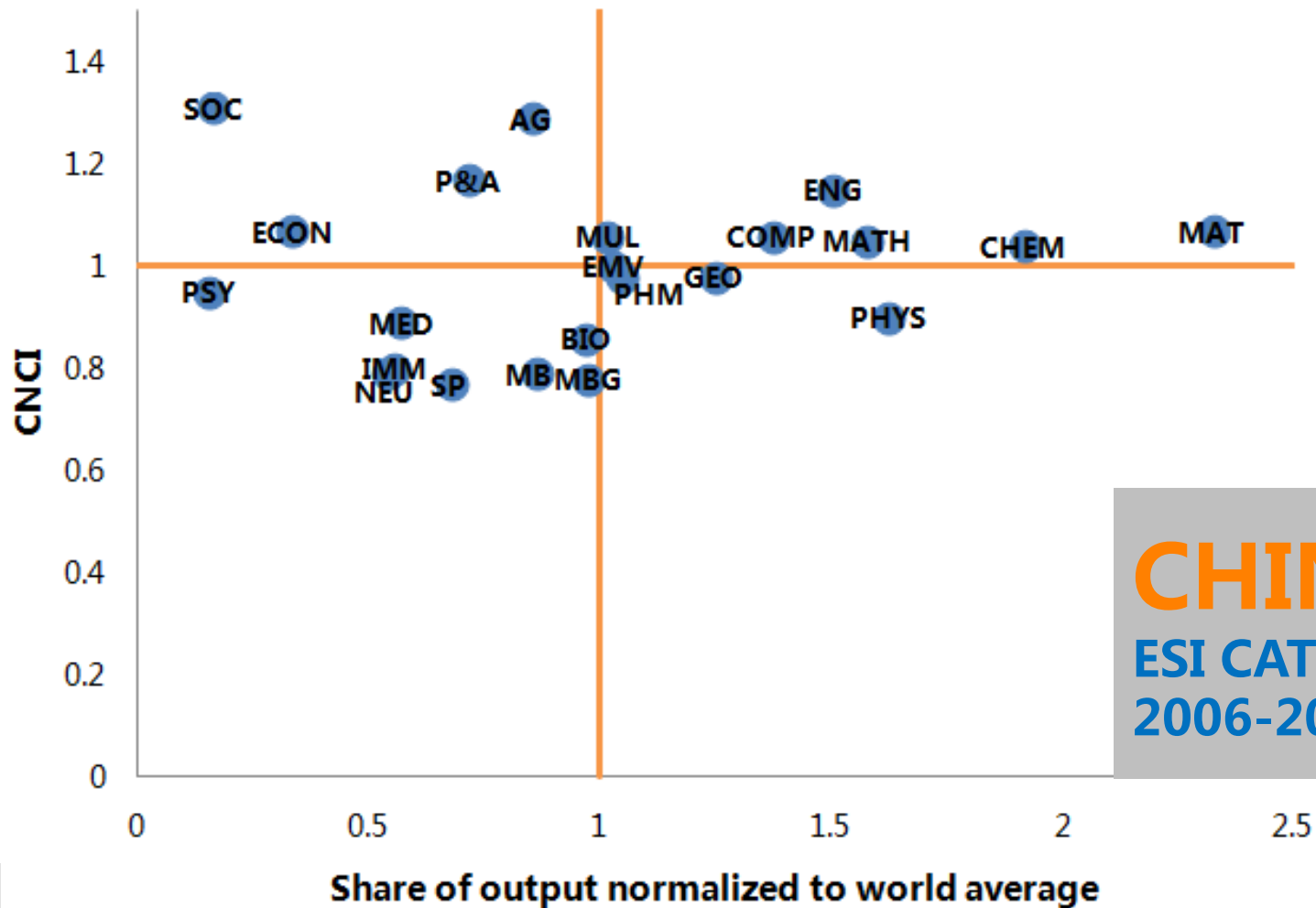




利用事实数据助力高校双一流的建设

- 开展深入学科分析、优化学科布局
- 跟踪研究前沿、探寻潜力研究方向
- 遴选国际合作伙伴、提升国际影响力
- 定位高影响力人才、产出一流的学术研究
- 分析基金资助论文的引文影响力
- 推广学术研究成果、加速全球影响力的提升

开展学科分析、优化学科布局



CHINA
ESI CATEGORIES
2006-2015

开展学科分析、优化学科布局

OPPORTUNITIES

AGRICULTURAL SCIENCES (35248)
ECONOMICS & BUSINESS (8944)
PLANT & ANIMAL SCIENCE (53720)
SOCIAL SCIENCES, GENERAL (14363)

STRENGTH

CHEMISTRY (327264)
COMPUTER SCIENCE (50265)
ENGINEERING (179108)
MATERIAL SCIENCE (175146)
MATHEMATICS (68026)
MULTIDISCIPLINARY (1981)

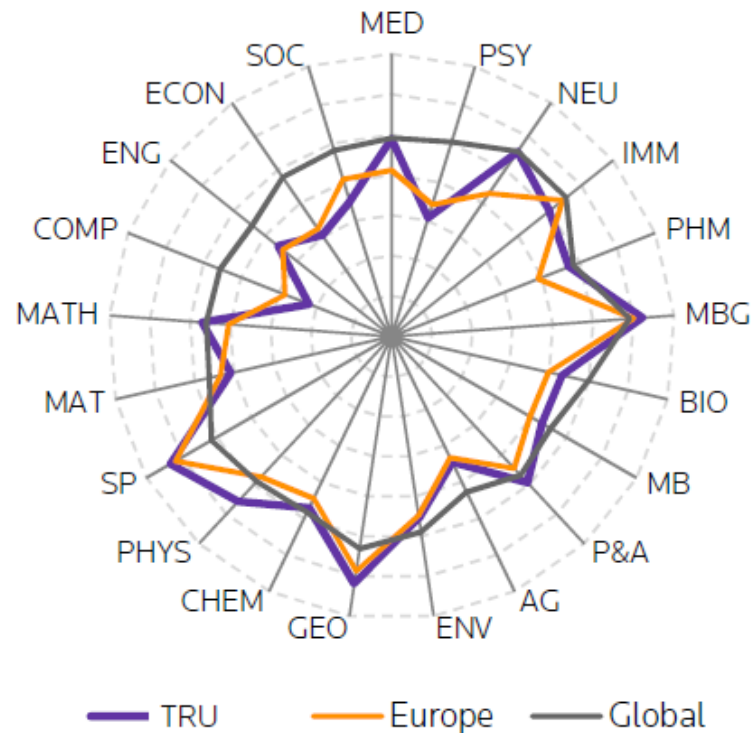
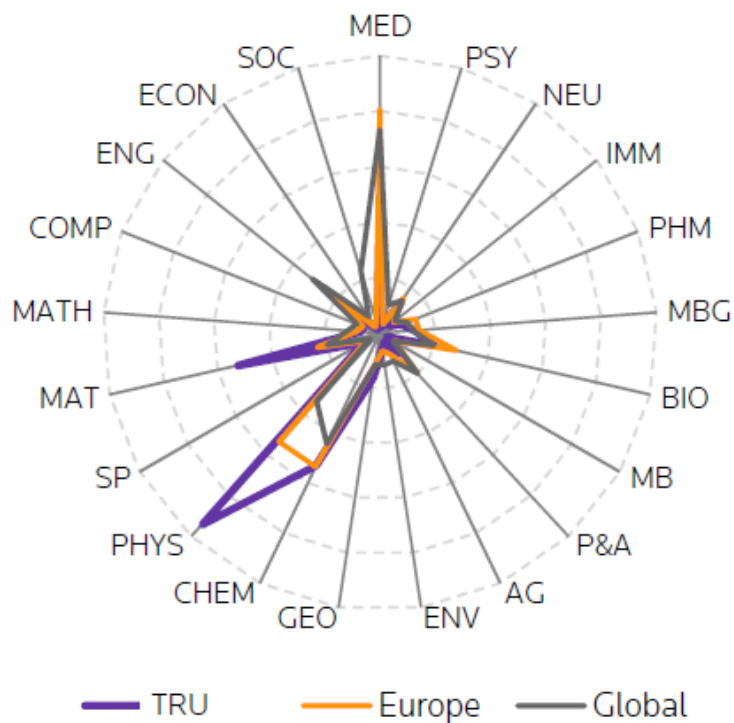
WEAKNESS

BIOLOGY & BIOCHEMISTRY (73029)
CLINICAL MEDICINE (155612)
IMMUNOLOGY (14527)
MICROBIOLOGY (17863)
MOLECULAR BIOLOGY & GENETICS (44800)
NEUROSCIENCE & BEHAVIOR (28439)
PSYCHIATRY/PYSCHOLOGY (6210)
SPACE SCIENCE (10485)

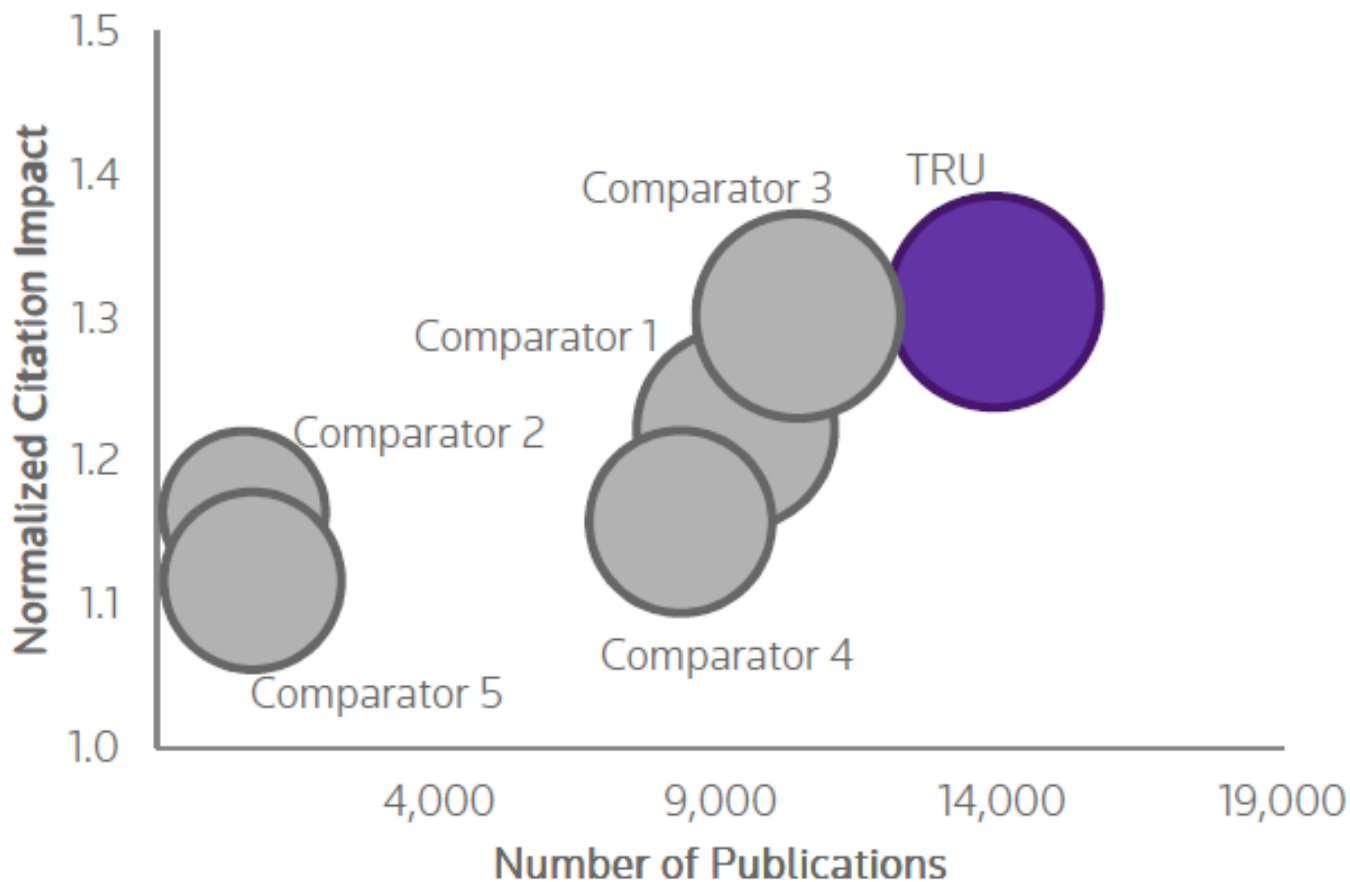
THREAT

ENVIRONMENT/ECOLOGY (44481)
GEOSCIENCES (54887)
PHARMACOLOGY & TOXICOLOGY (41069)
PHYSICS (199222)

开展深入学科分析、优化学科布局



开展深入学科分析、优化学科布局



跟踪基于一流学术信息的研究前沿

Highly Cited Papers by Research Fronts

Results List

Research Fronts

Filter Results By ?

Changing the filter field removes all current filters.

Add Filter »

Map View by Top / Hot / Highly Cited Papers

Show Visualization +

Report View by Selection

Customize

Research Fronts

Highly Cited Papers ▾

Mean Year

1

METABOLICALLY HEALTHY OBESITY; CORONARY HEART DISEASE-THE OBESITY PARADOX; CARDIOVASCULAR DISEASE MORTALITY; CARDIOVASCULAR DISEASE RISK FACTORS HYPERTENSION; NORMAL WEIGHT CENTRAL OBESITY

50

2013.3

1

2014 研究前沿

中国科学院文献情报中心
国家知识产权与科技事务部
新兴技术未来分领域联合研究中心

2014年10月

2015研究前沿

中国科学院文献情报中心
国家知识产权与科技事务部
新兴技术未来分领域联合研究中心
2015年10月

2016研究前沿

中国科学院科技战略咨询研究院
中国科学院文献情报中心
Clarivate Analytics

WEB OF KNOWLEDGE

2013 研究前沿

—— 自然科学和社会科学的前 100 个研究领域

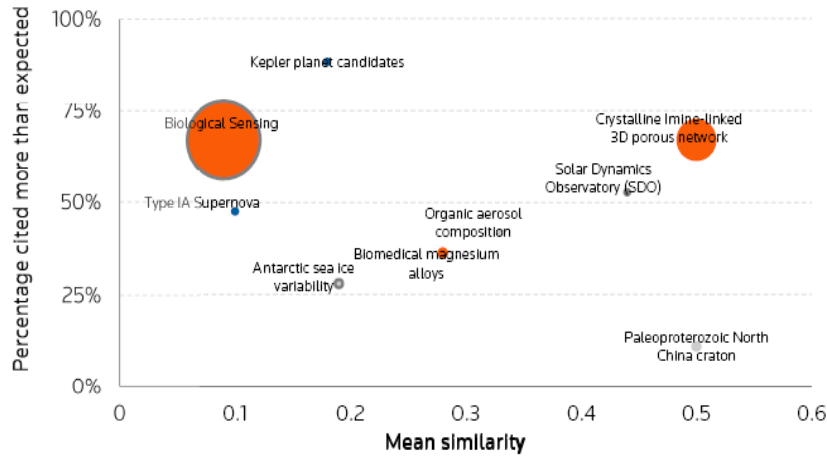
Christopher King
David A. Pendlebury

2013年4月

把握实时科研动态，探寻潜力研究方向

- 从已有研究方向基础上识别有潜力的新兴研究方向
- 把握其在某些研究前沿中的科研地位
- 激励研究人员提高自身及所在单位的科研竞争力及学术影响

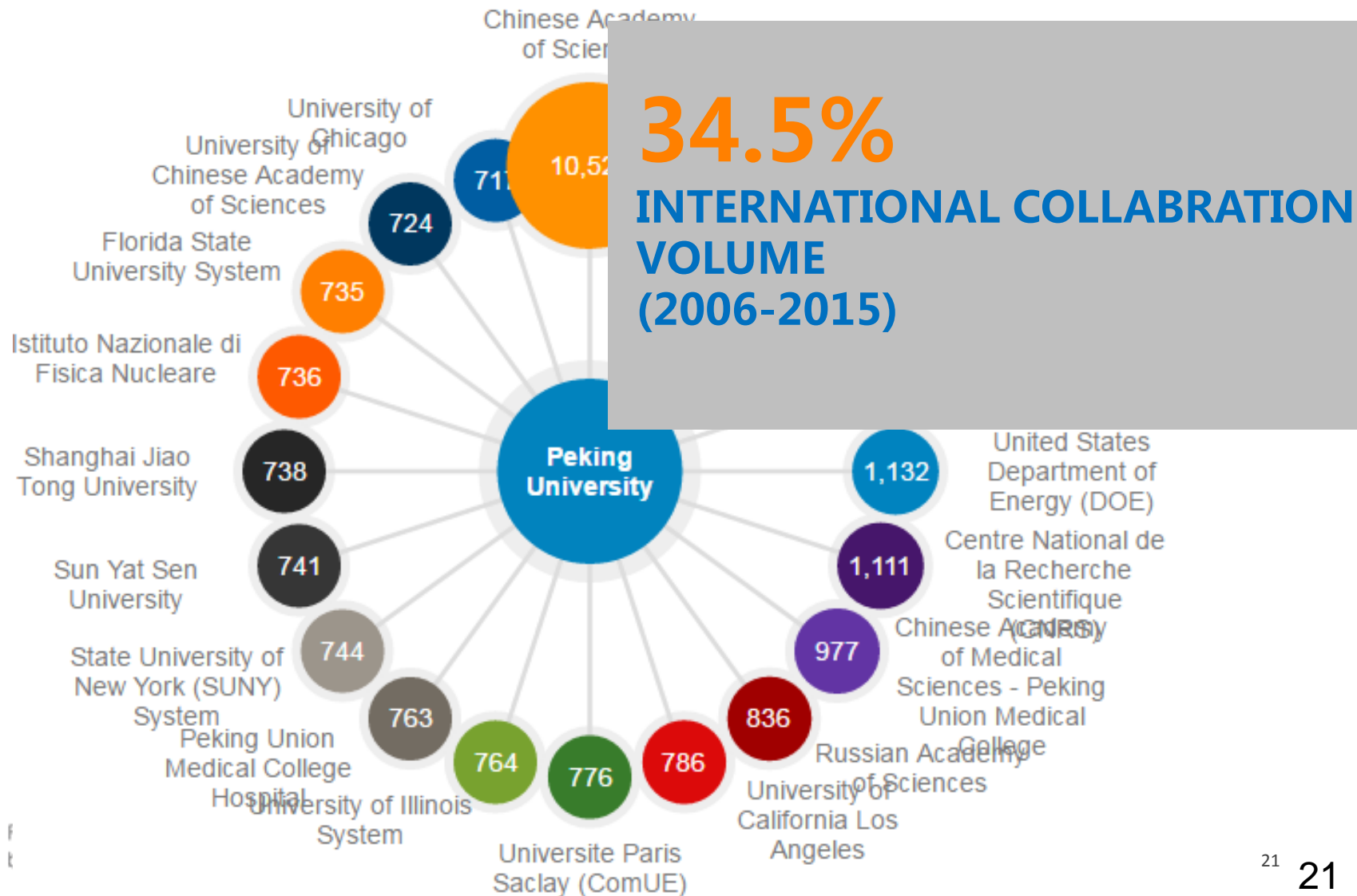
(A) Strengths



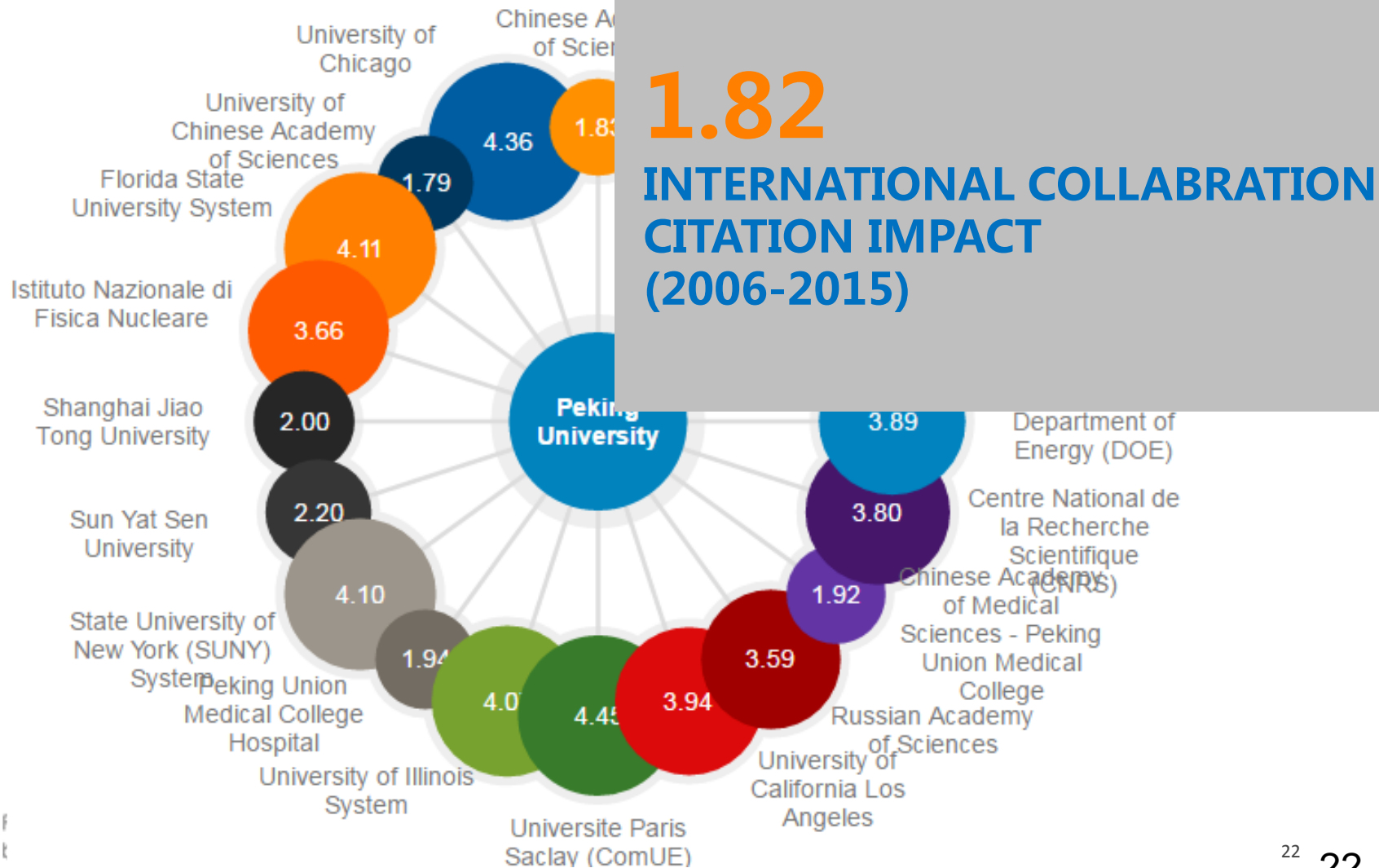
Note: a dark grey border indicates the institution has papers in the core *Research Front*

SWOT Category Discipline	Institutional Papers			
	N Papers ERF (RF)	Trending	N Papers (ERF (RF))	% of ERF Mean Sim
Strengths				
Physics (PHYS)				
Superconducting quantum circuits	800 (48)	↑	18 (0)	2.3% 0.39
Three-dimensional topological semi-metals	1489 (47)	↑	12 (0)	0.8% 0.24
Topological superconducting wires	1410 (47)	→	5 (0)	0.4%
Space Science (SP)				
Type IA Supernova	997 (46)	↑	13 (0)	1.3%
Kepler planet candidates	440 (24)	↑	12 (0)	2.7% 0.38
Solar Dynamics Observatory (SDO)	525 (21)	→	5 (0)	1.0%
Geosciences (GEO)				
Paleoproterozoic North China craton	844 (46)	→	20 (0)	2.4%
Antarctic sea ice variability	560 (24)	→	12 (0)	2.1%
Organic aerosol composition	697 (22)	↑	8 (0)	1.1%
Weaknesses				
Computer Science (COMPT)				
Neighborhood rough set based heterogeneous feature	477 (26)	↑	9 (0)	1.9%
Fuzzy generalized hybrid aggregation	317 (19)	→	8 (0)	2.5%
Engineering (ENG)				
Finite control set model predictive control	899 (49)	↑	5 (0)	0.6%
Active power filter control strategy	1350 (45)	→	5 (0)	0.4%
Pharmacology & Toxicology (PHM)				
OXA-48 Carbapenemase-producing klebsiella pneumoniae	667 (20)	↑	5 (0)	0.7%
Two new-type synthetic cannabinoids	420 (14)	↑	5 (0)	1.2%

遴选国际合作伙伴、提升国际影响力

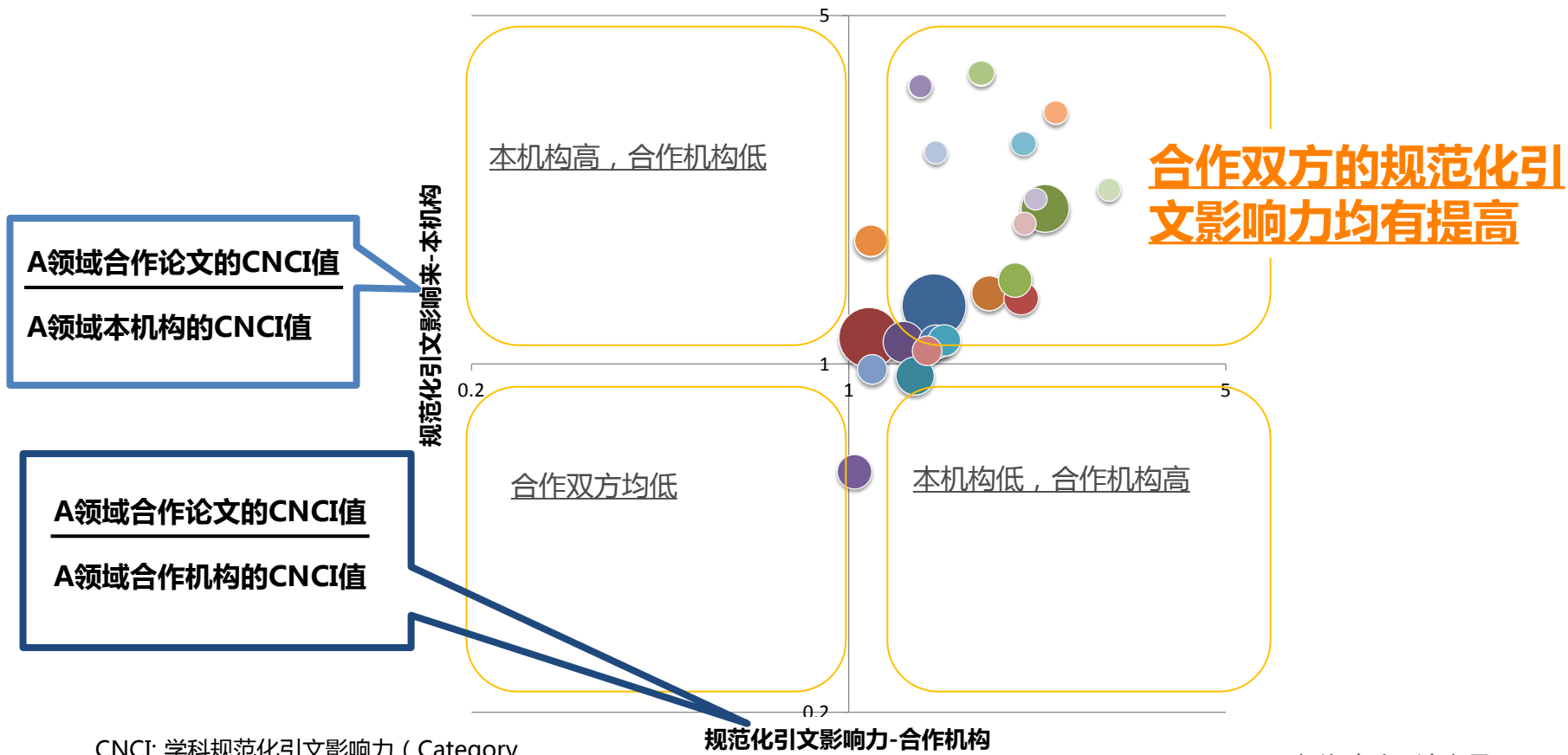


遴选国际合作伙伴、提升国际影响力



遴选国际合作伙伴、提升国际影响力

明确合作效果



CNCI: 学科规范化引文影响力 (Category Normalized Citation Impact)

气泡大小=论文量

一流大学教授的四条标准：

- 国际会议有声音：特邀报告、主旨发言
- 国际期刊有文章：主编、编委、审稿人
- 国际学术组织中有地位：轮值主席、会长、副会长
- 国际奖项中有名次：主要或突出的贡献

李志民 博士
教育部科技发展中心主任

科研人员的绩效分析与评估

论文很重要，但不是唯一的指标

- 获得奖项
- 基金资助
- 学术大会主题发言
- 学术团体中的贡献
- 期刊的编委
- 论文：
 - 论文量
 - 影响力
 - 期刊

基于文献计量学的科研人员的绩效分析

- 多指标
- 相对指标

作者层面的CNCI与JNCI指标示意

	总出版物	总引文数	引文影响力	h-指数	CNCI	JNCI
科研工作者D	66	290	4.39	9	1.32	1.86
科研工作者E	62	289	4.66	9	0.45	0.72

一系列指标作为人才评估与人才引进的参考

论文产出和引文影响力

Web of Science文献量

被引频次

引文影响力

被引文献所占百分比

H 指数

规范化指标

百分位和平均百分位

学科规范化引文影响力

学科期望引文影响力

高被引论文

热点论文百分比

期刊规范化引文影响力

期刊期望引文影响力

相对世界平均水平影响力

高水平论文

被引次数排名前1%的论文百分比

被引次数排名前10%论文百分比

学科规范化引文影响力

高被引论文

合作指标

国际合作论文所占百分比

国际合作论文量

横向合作论文百分比



深入了解重点实验室的科研表现

在Web of Science中检索“化工资源有效利用国家重点实验室”的记录，选择保存到InCites

The screenshot shows the Web of Science search results interface. At the top, the 'WEB OF SCIENCE™' logo and 'THOMSON REUTERS™' are visible. The search bar contains the text '化工资源有效利用国家重点实验室'. The results are sorted by 'Times Cited -- highest to lowest'. The first result is 'Graphene in Mice: Ultrahigh In Vivo Tumor Uptake and Efficient Photothermal Therapy' by Yang, Kai; Zhang, Shuai; Zhang, Guoxin; et al., published in NANO LETTERS, Volume 10, Issue 9, Pages 3318-3323, SEP 2010. The second result is 'Enhanced Mechanical Properties of Nanocomposites at Low Graphene Content' by Rafiee, Mohammad A.; Rafiee, Javad; Wang, Zhou; et al., published in ACS NANO, Volume 3, Issue 12, Pages 3884-3890, DEC 2009. The interface includes a 'Refine Results' sidebar on the left, a 'Sort by' dropdown, and a 'Page 1 of 368' indicator. On the right, there are options to 'Analyze Results', 'Create Citation Report', and 'Usage Count' for each result.

Results: 3,676
(from Web of Science Core Collection)

You searched for: ADDRESS: (stat* key lab* Chem* Res* Engn*) AND ORGANIZATION-ENHANCED: (Beijing University of Chemical Technology)
Refined by: DOCUMENT TYPES: (ARTICLE OR REVIEW)
Timespan: 2006-2015. Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, CCR-EXPANDED, IC.
...Less
Create Alert

Refine Results

Sort by: Times Cited -- highest to lowest

Page 1 of 368

Select Page | Save to InCites | Add to Marked List

1. **Graphene in Mice: Ultrahigh In Vivo Tumor Uptake and Efficient Photothermal Therapy**
By: Yang, Kai; Zhang, Shuai; Zhang, Guoxin; et al.
NANO LETTERS Volume: 10 Issue: 9 Pages: 3318-3323 Published: SEP 2010
Full Text from Publisher | View Abstract

2. **Enhanced Mechanical Properties of Nanocomposites at Low Graphene Content**
By: Rafiee, Mohammad A.; Rafiee, Javad; Wang, Zhou; et al.
ACS NANO Volume: 3 Issue: 12 Pages: 3884-3890 Published: DEC 2009
Full Text from Publisher | View Abstract

Analyze Results
Create Citation Report
Times Cited: 783 (from Web of Science Core Collection)
Highly Cited Paper
Usage Count

Times Cited: 571 (from Web of Science Core Collection)
Highly Cited Paper
Usage Count

深入了解重点实验室的科研表现

结果: 341

数据集: Chem. Res. Engin-BUCT

过滤器: 按属性

名称	排名	Web of Science 论文数	学科引文
所有结果基准值	不可用	3,675	
Beijing University of Chemical...	1	3,675	
合作机构			
合作者			
合作国家/地区			
研究方向			
期刊			
关联人员			
关联国家/地区			
基金资助机构			
Sciences	2	272	
ium	3	136	
iversity	4	48	
	5	47	
	6	43	
Beijing Normal University	7	35	

- 图中展现了本重点实验室论文的全部参与机构信息
- 通过基线，可以评估这一重点实验室总体的引文影响力水平
- 了解每一篇论文的相关指标
- 通过重新聚焦，可以对该数据集进一步分析：合作机构、人员、期刊分布等

受基金资助的论文的引文影响力表现



论文产出最多的前10个基金的CNCI都超过了全球平均水平,其中新世纪优秀人才支持计划资助的论文CNCI表现最佳

推广学术研究成果、加速全球影响力的提升



中国科学院化学研究所机构知识库

Log In
Register

GO

ICCAS OpenIR > 分子纳米结构

ALL

Advanced

[浏览]
BROWSING

Communities

Subjects

All Items

subject.discipline: 物理化学

title: Implantation of nanomaterials and nanostructures on surface and their applications

author: Bai CL(白春礼)

contributor.correspondent: 白春礼

citation.source: Nano Today (影响因子: 15.000[JCR-2014], 20.089[5-Year J])

date.issued: 2012-07-12

citation.volume: 7, **citation.issue:** 3, **citation.pages:** 258-281

citation.indexed: SCI收录

description.department: 分子纳米结构与纳米技术实验室

description.project: 中科院机构知识仓储项目

Citation statistics: 27

type: 期刊论文

identifier.uri: <http://ir.iccas.ac.cn/handle/121111/5249>

Appears in Collections: null

Service

- [Recommend this item](#)
- [Save as my favorite item](#)
- [Show this item's statistics](#)
- [Export Endnote File](#)

Google Scholar

- [Similar articles in Google Scholar](#)
- [\[白春礼\]'s Articles](#)

CSDL cross search

- [Similar articles in CSDL Cross Search](#)
- [\[白春礼\]'s Articles](#)

Related Copyright Policies

Null

Social Bookmarking



Files in This Item:

File Name/ File Size	Content Type	Version	Access	License
2012_wanlijunwangdong--001.pdf(4478KB)	--	--	限制开放	by-nc-sa View 联系获取全文

Recommended Citation:

Bai CL. Implantation of nanomaterials and nanostructures on surface and their application s. 2012.


推广学术研究成果、加速全球影响力的提升

大学向全球征募研究人员:

“collaboration support system for researchers from ABC University”

Osaka University is offering a new lab collaboration support system for researchers.

Osaka University proposes a new researcher support system to be the first choice for world researchers, educators and students.



The fields of immunology, chemistry, materials science, physics, biology, biochemistry, molecular biology, genetics, microbiology, and multidisciplinary studies are eight key disciplines ranked in the world's top 100. Osaka University seeks to strengthen its international competitiveness in these fields. Furthermore, to embody the idea of our "World Tatsumi Initiative" and to nurture leaders who can recognize and analyze global issues multi-dimensionally, we will be promoting new interdisciplinary fields such as drug development, cognitive neuroscience, robotics, protein science and technology, and even global history.

To enhance research quality and accelerate the globalization from Osaka University, we are happy to announce the establishment of the "International Joint Research Promotion Program". We will be supporting advanced research across the border and to participate with Osaka University. This also aims to enhance the quality and quantity of our international collaborative research.



Included principal researchers are recommended to stay in Osaka for at least one month and will be supported by Osaka University. Additionally, even during the period when principal researchers are absent from Osaka University, we will support the continuation of collaborative research by funding assistants and young researchers, as well as post-doc researchers for the duration of the research. We also cover travel expenses for students and faculty going abroad.

22 projects have already been selected by the since January 1, 2016. Our aim is to increase the number of projects to 100 by 2020. To express your interests please contact our team.

Belong to "International Joint Research Promotion Program" [click here](#)

Our challenge to promote new interdisciplinary/innovative fields, [click here](#)

Contact us

推广学术研究成果、加速全球影响力的提升



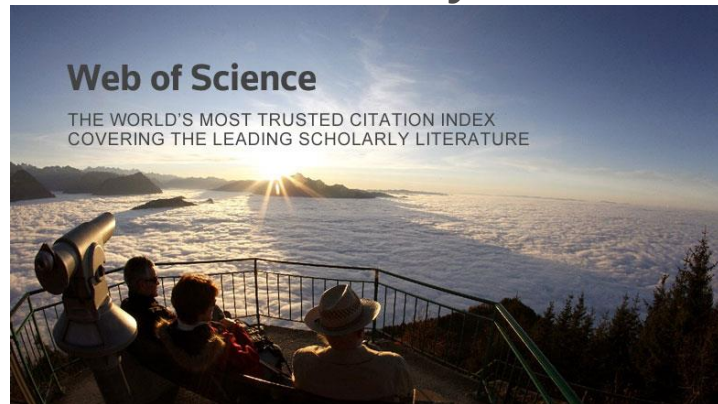
大学向全球推广奖学金项目

“World XYZ Initiative”
(the new initiative of
ABC University”

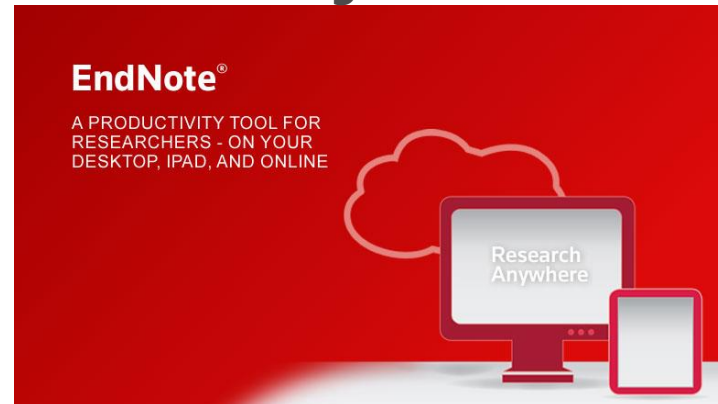
推送全球76,000余位研究人员

一流的学术研究需要一流的学术信息

Discovery



Collect & Organize Research



Benchmarking & Impact Analysis



Research Management Processes

评估专利资产和明确授权、转让与合作对象

3.1 Patent and Literature Analysis.....	10
3.1.1 Computer/Laptop.....	11
3.1.2 Display Devices.....	14
3.1.3 Light Emitting Diodes (LED).....	15
3.1.4 Automotive/ Vehicle.....	18
3.1.5 Cellphones/ Wireless Communication Devices.....	20
3.1.6 Avionics / Military.....	22
3.1.7 Electronics in General.....	25
3.1.8 Other Application Areas.....	28
3.1.9 Regional Analysis.....	30
3.1.10 Sector Analysis.....	
3.1.11 Inventive Velocity.....	
3.1.12 Summary Table.....	
3.2 Commercial Market.....	
3.2.1 Computer/Laptop.....	
3.2.2 Display Devices.....	
3.2.3 Light Emitting Diodes (LED).....	
3.2.4 Automotive/ Vehicle.....	
3.2.5 Cellphones/ Wireless Communication Devices.....	
3.2.6 Avionics / Military.....	
3.2.7 Summary Table.....	
3.4 Potential Customers.....	
3.4.1 United States.....	
3.4.2 Japan.....	
3.4.3 China.....	
3.4.4 Germany.....	
3.4.5 Taiwan.....	
3.4.6 Korea.....	
3.4.7 India.....	
3.4.8 Canada.....	
3.4.9 England.....	
3.4.10 Netherlands.....	
3.4.11 Other Regions.....	
3.4.12 Extended list of potential customers.....	
3.4.13 Summary Table.....	

- 通过相关专利和科学文献分析该类技术的可应用领域
- 根据商业情报分析了解各应用领域的相关企业 – 目标

Application Area	List of Companies	Market Size Global (in Billion USD)	Market Size China (in billion USD)
LED	Applied Nanotech Holdings, Inc.; Avcarb ; CapTherm Systems Inc.; Changzhou Tanyuan Technology Development Co Ltd.; China Sciences Hengda Graphite Co. Ltd; Chuanghe Fastener Co. Ltd.; Cofan , Komot Usa , Inc.; FJ Composite Materials Co. Ltd.; GrafTech International Ltd.; Heilongjiang J & X Co. Ltd.; Metal Matrix Cast Composites, LLC; MINTEQ® International Inc. Pyrogenics Group; Momentive Performance Materials Inc.; Philips; Polo Tech Co. Ltd.; Qingdao Bai Xing Graphite Co. Ltd.; Shenzhen Hongfucheng Shielding Material; Shenzhen Kuayue Electronic Co. Ltd.; Shouen Tech. Co. Ltd.; Suzhou Dasen Electronics Material Co. Ltd.; TTM Co. Ltd.	25.82 ²⁰⁴	4.81 ²⁰⁵
Avionics	American Energy Technologies Co.; Anderlab ; Applied Sciences, Inc.; Arkema ; BGF industries; Carlisle Brake & Friction; CPS Technologies Corporation; Cytec Industries, Inc.; Enertron , Inc.; Entegris ; Fabrico ; Hexcel; Honeywell Aerospace; IHI Aerospace Co. Ltd.; IJ research; Lehmann&Voss&Co. ; Mega-Graphite Inc.; Metal Matrix Cast Composites, LLC; MINTEQ®	745 (Commercial Aviation) ²⁰⁶ and 1190.5 (Aerospace & Defence) ²⁰⁷	32.6 ²⁰⁸

Helping universities find their niche-- and thrive within it

Gaining competitive advantage starts here

Analyze performance

- Track and report metrics over time
- Benchmark against other institutions
- Dynamic bibliometric analyses for standard and customized reporting
- Quantify research outputs to assess growth and the impact of strategic initiatives



Helping you find...



Cultivate strategic collaborations

- Evaluate existing research partnerships and measure performance
- Find highly cited researchers and institutions
- Gain new collaborations important to achieving strategy



Articulate your significance

- User generated visualization to tell the story that resonates with your audience
- Easy workflow tools for sharing reports
- Compile metrics to benchmark against peers
- Analyze changes in rankings
- Tell a story with citation data and metrics

your winning strategy!

Targeted approach to funding

- Rank funding agencies participating in a particular area
- Find out who is funding research
- Identify funding trends in hot research areas
- Manage grant application workflow



Understanding internal drivers

- Compare departmental performance
- Normalized view of performance at every level
- Follow the pathways from basic to applied, and to societal and economic outputs
- Probe the linkages between internal strategies and research excellence





REUTERS/Raj Patidar

数据来源 : Web of Science , InCites , ESI和JCR

联系方式 : wei.he@tr.com