微信公众号“报人刘亚东”
Scan the QR Code to follow my Official WeChat Account

技术创新在中国——真实情况报告
Tech innovation in China—what is really going on?

The large gap in science and technology between China and developed countries in the West, including the U.S., should be a common sense, not something to be argued.

科技日报 **刘亚东**

Liu Yadong with *Science and Technology Daily*

WeChat
报 人 刘 亚 东

PART 01

中国科技发展成绩斐然
Remarkable achievements of China’s science and technology development

R&D支出
R&D expenditure

全社会R&D支出占GDP比重为2.15%，超过欧盟15国2.1%的平均水平

R&D expenditure accounts for 2.15 percent of its GDP, outstripping the average level of 2.1 percent in 15 European Union member countries

论文引用量
paper citations

国际科技论文被引量首次超过德国、英国，跃居世界第二

The citations of Chinese papers on science and technology surpass Germany and the United Kingdom and ranked the second among the world for the first time

发明专利
Patent for invention

发明专利申请量和授权量居世界第一，有效发明专利保有量居世界第三

The application and approval of patents for invention rank the first in the world. China has the third most valid patents for invention in the world.

高新技术企业数
High-tech firms

全国高新技术企业总数超过13.6万家

The number of high-tech firms has surpassed 136,000 across China

1. 科技创新水平大幅提高
Notable improvement on the level of technology innovation

航空航天 Aerospace

天宫 神舟 天舟 嫦娥 长征系列等

Tiangong space labs, *Shenzhou* spaceships, *Tianzhou* cargo spaceships, *Chang'e* man-made satellites, and *Long March* launch vehicles

超级计算 Supercomputer

超级计算机连续十次蝉联世界之冠

China's supercomputer has claimed the lead of the world's top supercomputers for 10 consecutive years

基因编辑 Gene editing

医疗、育种方面取得世界一流成果

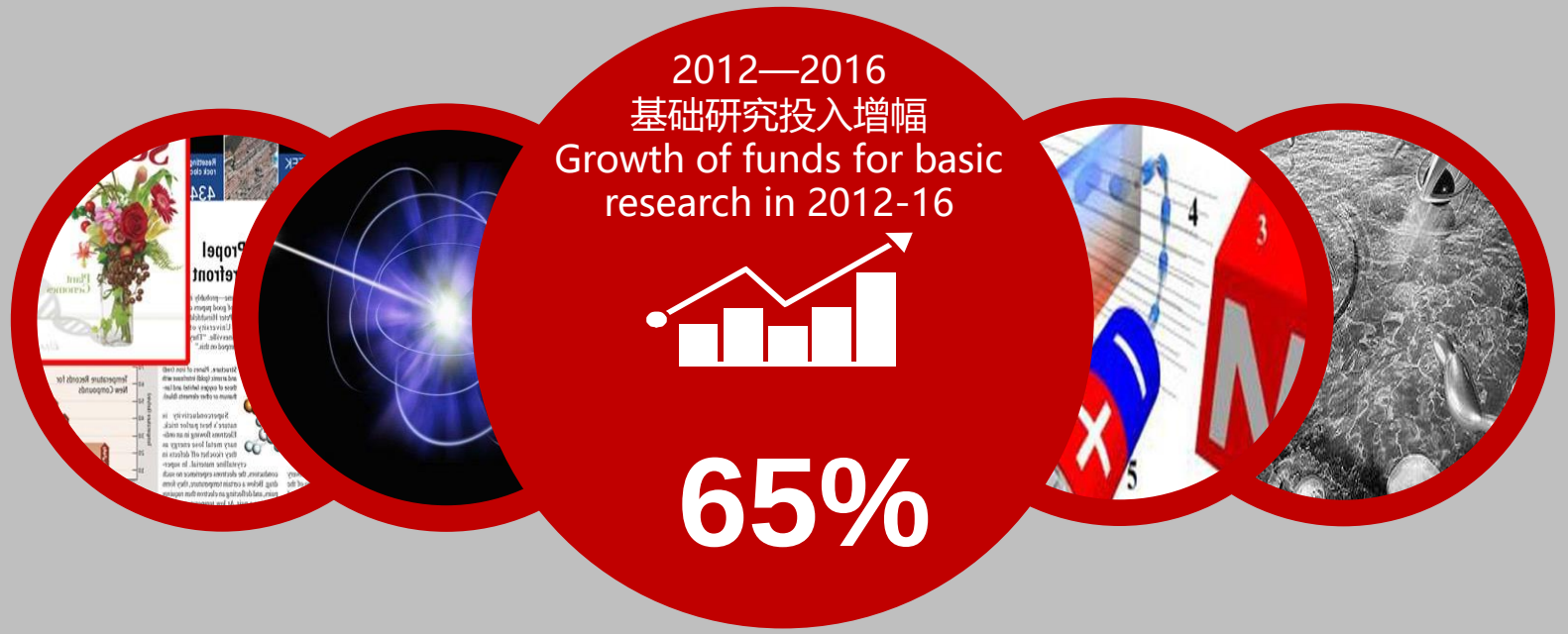
World top achievements have been achieved in applying gene editing to medical care and breeding.

. . . . . .

科技创新水平大幅提高 · **战略高技术**

Improving technology innovation: strategic high-techs

科技创新水平大幅提高 · **基础研究**
Improving technology innovation: basic research



基础研究经费投入快速增长，从2012年的499亿元增长到2016年的823亿元，增幅达65%

国家重点研发计划、自然科学基金持续加大对重大原始创新和交叉学科领域的支持力度

Funding for basic research grows fast from 49.9 billion yuan in 2012 to 82.3 billion yuan in 2016, an increase of 65 percent. The national key R&D programs and National Natural Science Foundation of China continue to increase support to major original innovations and interdisciplinary researches.

系列科学实验卫星
FAST
大亚湾中微子振荡实验室
上海光源
全超导托卡马克核聚变装置
……

Science satellites
FAST
Laboratory for neutrino oscillation in Daya Bay
Shanghai Synchrotron Radiation Facility
Experimental Advanced Superconducting Tokamak
……

重大科研基础设施全球瞩目，为我国向世界科学中心迈进奠定重要物质技术基础。
Major research infrastructure attracts world's attention, laying a technological foundation for China to move toward as world's technological center.

科技创新水平大幅提高 · **平台布局**
Improving technology innovation: platforms

科技创新水平大幅提高 · **人才队伍**
Improving technology innovations: talents

创新创业人才加快集聚，我国正在成为世界创新创业者的热土和乐园。

China is becoming a world fertile land for startups as it attracts more and more innovative and entrepreneurial talents.

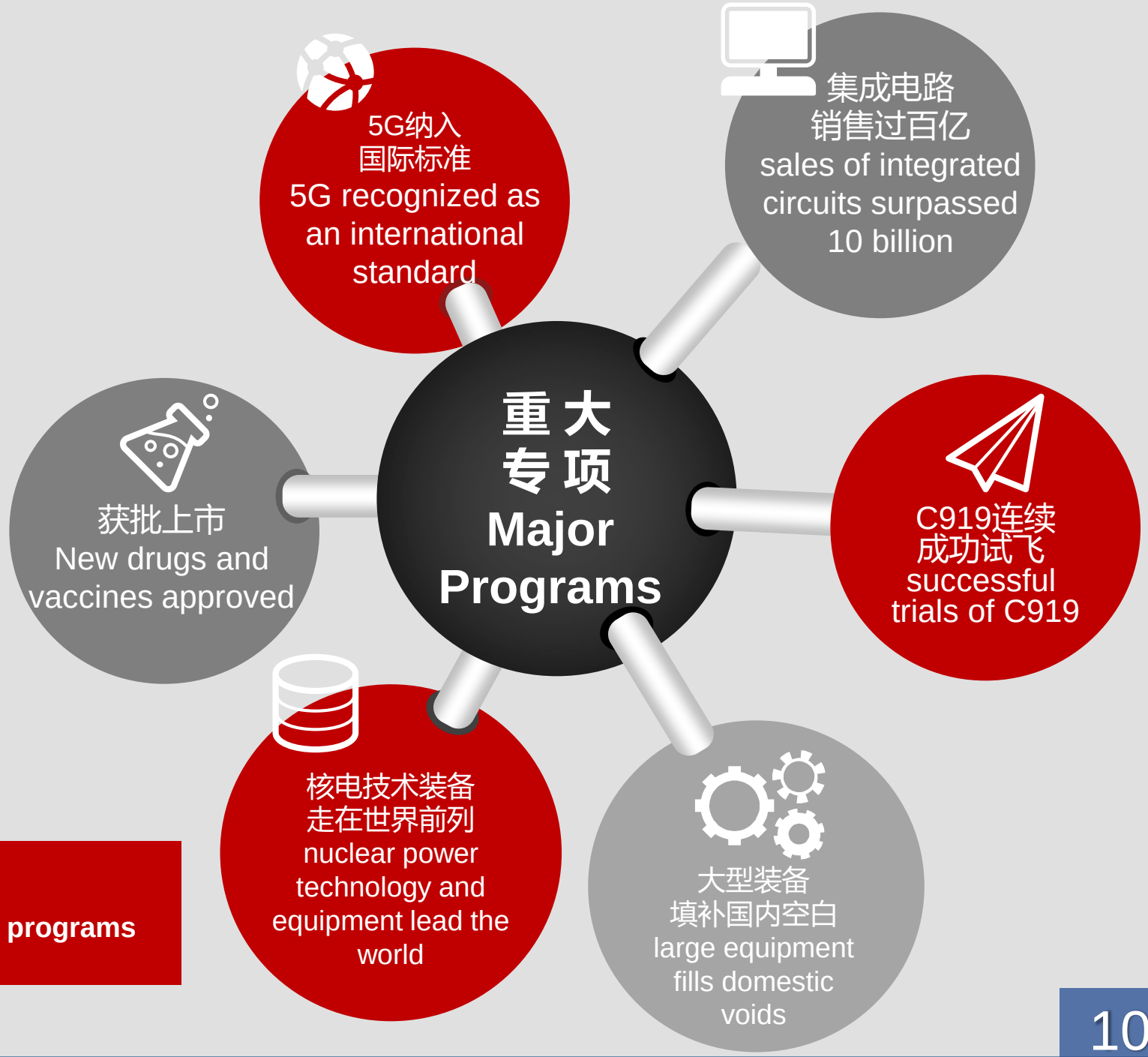
2016年研发人员全时当量达**387.8万人年**，居世界第一。

Full-time equivalent of R&D personnel amounted to **3.878 million** in 2016, ranking the first in the world.

千人计划、万人计划、创新人才推进计划，以及教育部科教结合协同育人行动计划、中科院百人计划等深入实施，培养引进了一批高层次科技人才，带动形成新中国成立以来最大规模的留学人才“归国潮”。

The recruitment program for global experts, program of fostering innovative talents, action plan for training talents introduced by the Ministry of Education, and the program for 100 top scientists funded by Chinese Academy of Sciences have trained and attracted significant number of top researching talents. They also brought back the most Chinese students studying abroad since the founding of the new China.

2. 科技创新支撑经济社会发展
Technology innovations bolster up economic and social development



科技创新支撑社会经济发展 · **重大专项**
Bolstering up economic and social development: major programs

科技创新支撑社会经济发展 · 重大工程
Bolstering up economic and social development: major projects

高 铁
high-speed railway

高速铁路里程超过2.2万公里，占全球总里程的60%以上；复兴号实现商业运营

The total mileage of high-speed railway has surpassed 22,000 km, accounting for more than 60 percent of the world's total. Fuxing high-speed train is in commercial operation.

蓝鲸系列钻井平台
Lanjing drilling platforms

超深水半潜式蓝鲸系列钻井平台成为世界最大、钻井深度最深的海上钻井平台之一，成功完成我国可燃冰首次试采

Lanjing super deep-water semi-submersible drilling platforms are one of the world's largest maritime drilling platforms with the most drilling depth. The platforms have finished China's first exploitation of combustible ice.

港珠澳大桥
Hong Kong-Zhuhai-Macao Bridge

突破国外垄断，成为世界综合技术含量最高、施工规模和难度最大、标准最高的工程

The bridge breaks foreign monopoly, is the project of the most advanced comprehensive technologies, and the most difficult and largest project with the highest standard.

新能源汽车
Electric cars

160万辆
1.6 million

新能源汽车从产品导入期进入产业成长期，累计产销量超过160万辆。

Electric car making is fast growing with 1.6 million cars being sold

可再生能源
Renewable energy

6亿千瓦
600 million kw

可再生能源发电装机突破6亿千瓦，风光储输示范工程成为全球规模最大、综合利用水平最高的新能源综合示范项目。

The installed capacity of power generation from renewable energy has exceed 600 million kw. The wind and solar powers reserve and transmission project is the world's largest and most frequently used demonstrative project for comprehensive use of renewable energy.

数字经济
Digital economy

22.6万亿元
22.6 trillion yuan

数字经济、平台经济、共享经济快速发展。2016年数字经济规模达到22.6万亿元。

Digital economy and sharing economy are booming. The valuation of digital economy reached 22.6 trillion yuan in 2016.

科技创新支撑社会经济发展 · **新产业新动能**

Bolstering up economic and social development: new industries and new momentums

3. 科技体制改革向系统纵深推进
Reform on R&D institutions has been deepened

科技体制改革在全面深化改革中发挥了排头兵和先锋队作用，改革的整体性系统性协同性显著增强，科技领域“放管服”改革取得重要进展，科技管理的主体架构和基础制度基本建成，以改革驱动创新、以创新驱动发展的格局基本形成。

Reform on R&D institutions spearheads efforts in advancing all-around reform. Notable progress has been made in advancing the reform in a holistic, systematic and coordinated manner. Major headway has been made in reforms to streamline administration, delegate powers and improve regulation and services in the R&D sector. The main framework and system for R&D administration have been built. The pattern of reform-driven innovation, and innovation-driven development has basically taken shape.

企业已成为创新创业的主要力量，在全社会研发投入、研究人员和发明专利的占比均超过70%。

Enterprises have become the driving forces for innovation. Their R&D inputs, personnel, and patents of invention account for more than 70 percent of the totals by the whole society.

企业创新主体地位显著增强
Enterprises become the driving forces for innovation

PART 02

《科技日报》为什么开设“亟待攻克的核心技术”专栏
Why did *the Science and Technology Daily* set a column of “Core Technologies in Urgent Needs of Major Breakthroughs”?

是什么卡了我们的脖子

亟待攻克的核心技术科学传播沙龙

Science salon: what strangled our neck?

Core technologies in urgent need of major breakthroughs

6月21日下午，“是什么卡了我们的脖子 • 亟待攻克的核心技术” 科学传播沙龙在中国科技会堂召开。沙龙旨在分析我国关键核心技术短板，理性认识我们与发达国家的差距，从而呼吁科技界产业界集中力量奋力攻关。
杜祥琬院士、倪光南院士等科技界重量级嘉宾发表了主旨演讲。我最后发言，在介绍了《科技日报》“亟待攻克的核心技术”专栏出台的背景和意义之后，详细诠释了——

A science salon, with the theme of what strangled our neck? Core technologies in urgent need of major breakthroughs, was held in China Hall of Science and Technology on the afternoon of June 21. It aimed to examine areas China falls short in core technologies, and rationally see the gap between us and advanced countries in a bid to call for the science and technology sector to pool efforts and attain breakthroughs.
Academicians including Du Xiangwan and Ni Guangnan delivered keynote speeches at the salon. I was the last speaker. After briefing on the background and significance of setting up a column of core technologies in urgent need of major breakthroughs on *the Science and Technology Daily*, I elaborated on ---

除 了 那 些 核 心 技 术 ， 我 们 还 缺 什 么 ？
What else do we need besides the core technologies?

【岛读】是什么卡住了我们核心技术的脖子?

刘亚东 侠客岛 6月23日

【侠客岛按】

6月21日下午，“是什么卡了我们的脖子？亟待攻克的核心技术”科学传播沙龙在中国科技会堂召开。**科技日报总编辑刘亚东做了主题演讲。**

这篇演讲很有意义。刘亚东除了介绍《科技日报》“亟待攻克的核心技术”系列报道出台的背景和意义外，还详细说明了，除了核心技术，我们到底缺的是什么？

真正的强大不是完美，而是正视自己的不足。侠客岛予以推荐并与各位岛友共勉。

忠言逆耳！官媒总编：“我的国”确实还有“不厉害”的地方

北京日报 v | 发布于 2018-06-25 16:53:08 | 举报 | 查看源网址

阅读数：18068

欢迎下载“长安街知事”APP

长安观察

中国新闻奖名专栏

中国的科学技术与美国及其他发达国家相比有很大差距，这本来是常识，不是问题。可是国内偏有一些人，一会儿说“新四大发明”，一会儿说“全面赶超”，成为“世界第一”，说得有鼻子有眼，而中国实际上是在别人的地基上盖房子。

这是《科技日报》总编辑刘亚东一次演讲中的片段。连日来，这篇演讲稿在网上流传甚广，不少人对此文大加赞赏，认为刘亚东敢讲真话、所言振聋发聩。

我们不妨共同读读文中的干货——

我们今天一些正在苦苦攻关的重大项目，比如载人登月，美国1969年就已大功告成，明年整整50年。这些都是看得见、摸得着的差距。

Top stories

China must stop fooling itself it is a world leader in science and technology, magazine editor says

The large gap in science and technology between China and developed countries in the West, including the US, should be common knowledge, and not a problem." Liu said.

But it became problematic when the people who hyp China's achievements] … fooled the leadership, the public and even themselves."

相比妄自尊大，我们最大的问题还是自信不足

□ 长江日报评论员 鲁锐

“成就”与“差距”要辩证看待

“厉害了我的国”是发自内心的真情实感

强起来的大国需要成熟的国民心态

在网上网下、国内国外引起轩然大波

Heated debates both online and offline, at home and abroad

中国科技与美国及其他西方发达国家相比有很大差距，
这是常识，不是问题！
A common sense, not something to be argued!
A large gap on science and technology between China and the United States, and other Western developed nations

改革开放40年来，中国的科学技术取得了长足进步，这些举世瞩目的成绩当然值得肯定，但是我们更应该看到差距和不足。

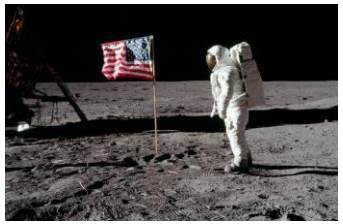
China has made remarkable achievements in science and technology over the past 40 years since reform and opening up, which deserves acclaims, but we should also be well aware of our shortage and deficiencies.

大飞机
Large aircraft

波音707掀开了现代喷气式客机发展的序幕，美国于1954年进行了首飞试验。

The Boeing 707 unveiled an era of modern jetliners. The United States made the first trial flight in 1954.

载人登月
Man landing on the moon



美国阿波罗11号于1969年7月成功登陆月球，阿姆斯特朗和巴兹·奥尔德林成为最早到达月球的人。

Apollo 11 launched by the United States successfully landed on the moon in July 1969. Neil Alden Armstrong and Buzz Aldrin were the first people landed on the moon.

7月13日 中央财经委员会第二次会议

习近平发表重要讲话

Xi Jinping delivered an important speech at the second meeting of central financial and economic commission of the CPC Central Committee on July 13

我国科技发展水平特别是关键核心技术创新能力同国际先进水平相比还有很大差距，同实现“两个一百年”奋斗目标的要求还很不适应。

There is still a huge gap on science and technology, particularly the ability of innovation on core technologies between China and the world leading countries. It cannot meet the requirements to realize the two centenary goals.

关键核心技术是国之重器，对推动我国经济高质量发展、保障国家安全都具有十分重要的意义，必须切实提高我国关键核心技术创新能力，把科技发展主动权牢牢掌握在自己手里，为我国发展提供有力科技保障。

Core technologies are the pillars of national strength. They are of great significance to advance China’ s high-quality economic development and national security. We should improve the capability of innovation on core technologies and hold firm the initiative of science and technology development in our own hands so as to provide robust technological guarantee for the national development.

不平衡 Imbalances

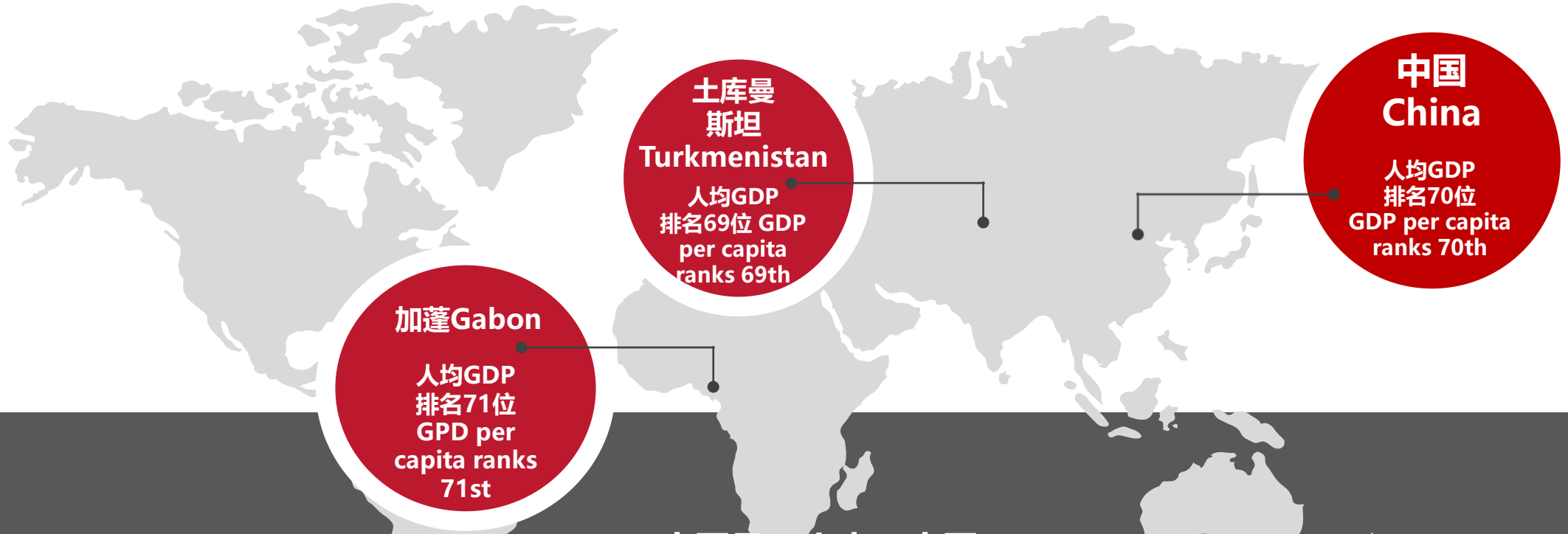
民生领域还有不少短板，脱贫攻坚任务艰巨。较大的群体差别、城乡差别、东西部差别无时不在困扰着我们；粗放的发展方式也让我们在资源环境方面付出沉重代价。

We still fall short in terms of people’ s livelihood. Poverty reduction is still an arduous task. We are still plagued by income disparity, urban-rural development gap and disparity between the west and east. We have paid a dearly price in terms of resources and environment because of the extensive development path.

不充分 Inadequacies

发展质量和效益不高，创新能力不强，生态文明建设任重道远；群众在就业、教育、医疗、居住、养老等方面面临不少难题……

We still fall short in the quality and efficacy of development, and the capability of innovation. Ecological advancement is a daunting challenge. The public still face difficulties and inequality in employment, education, medical care, housing and providing for the aged.



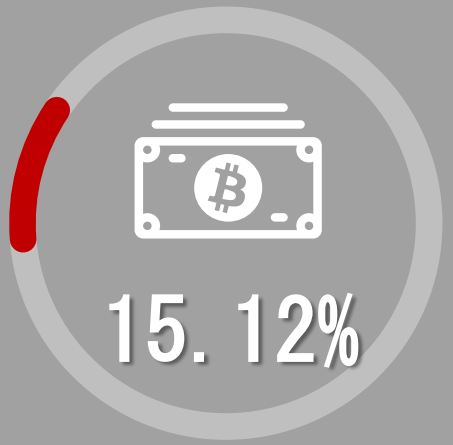
中国是一个人口大国，

再大的成绩被l3亿这个除数一除，就变得眇乎小哉；再小的问题被13亿这个乘数一乘，就变得硕大无朋。

Given China’s huge population, any remarkable achievement is dwarfed as it is divided by 1.3 billion, but any tiny issue becomes unspeakably huge when it is multiplied by 1.3 billion.

13.9008亿

1.39008 billion



人口占比
Ratio of population

世界人口2017年已达76亿，
中国大陆人口约为13.9亿中国大陆人口占全球的比重约为**18.29%**

The world population was 7.6 billion in 2017. China's population on its mainland was 1.39 billion, about 18.29 percent of the world's total.

GDP占比
Ratio of GDP

去年全世界生产总值约为81万亿美元，美国19万亿美元中国82.7万亿元人民币，中国GDP约为12.25万亿美元，占全球比重约为**15.12%**

Last year, the world's total economy valued about $81 trillion. The U.S. economy was $19 trillion, whereas China's was 82.7 trillion yuan, about $12.25 trillion, 15.12 percent of the world total.

经济增速
Economic growth

未来几年中国经济增速都将保持在6.5%。而全球经济增速未来几年在3%或接近3%，这样看**3年内中国人均GDP可达世界平均水平**

In the next few years, China's growth rate is expected to maintain around 6.5 percent, whereas the world economy might growth at 3 percent or lower. Therefore, China's GDP per capita could reach the world average in the next three years.

我国拥有自主知识产权的“华龙一号”核电机组，虽然大部分设备实现了国产化，但是15%的关键零部件还依靠进口。

Most equipments of Hualong One, a nuclear reactor of which China owns independent intellectual property rights, are made by China, but 15% of the key components of the nuclear reactor still need to be imported.

要成为制造强国至少要再努力30年

It takes another 30 years at least to become a manufacturing power.

工信部部长苗圩：
在全球制造业的四级梯队中，中国还处于第三梯队，而且这种格局在短时间内难有根本性改变。

Miao Wei, Minister of Industry and Information Technology:
China is still in the third echelon of the four echelons of global manufacturing sector. And its positioning will not be fundamentally improved in a short period of time.

自主创新能力薄弱
weak independent innovation

基础配套能力不足
poor supporting infrastructure

部分领域产品质量可靠性有待提升quality and reliability of products in some sectors should be improved

产业结构不合理
industrial structure need to be upgraded

党的十九大报告指出，

我国仍处于并将长期处于社会主义初级阶段的基本国情没有变，

我国是世界最大发展中国家的国际地位没有变。

The report to the 19th CPC National Congress: The basic dimension of the Chinese context—that our country is still and will long remain in the primary stage of socialism—has not changed. China's international status as the world's largest developing country has not changed.

我们的制造业还没有升级，但一些制造业者却已开始撤离，声称要向服务业转型。

——苗圩

Our manufacturing has not been upgraded, but some manufacturers have withdrawn from the sector, claiming to transforming into a service provider.
By Miao Wei

虚拟经济是实体经济的工具。我们不该去炫耀锄头而忘了种地！

——任正非

Virtual economy should be the tool of real economy. We are not supposed to show off the hoes, but forgot to do the farm work.
By Ren Zhengfei

PART 03

中国的核心技术短板在哪里
Areas where China falls short in core technologies

中国的核心技术短板主要体现在六个方向，

工业制造，信息技术，材料，航空航天，海洋，生物医药。

China falls short in core technologies in six areas including industrial manufacturing, information technology, materials, aerospace, oceanics and bio-pharmaceutical

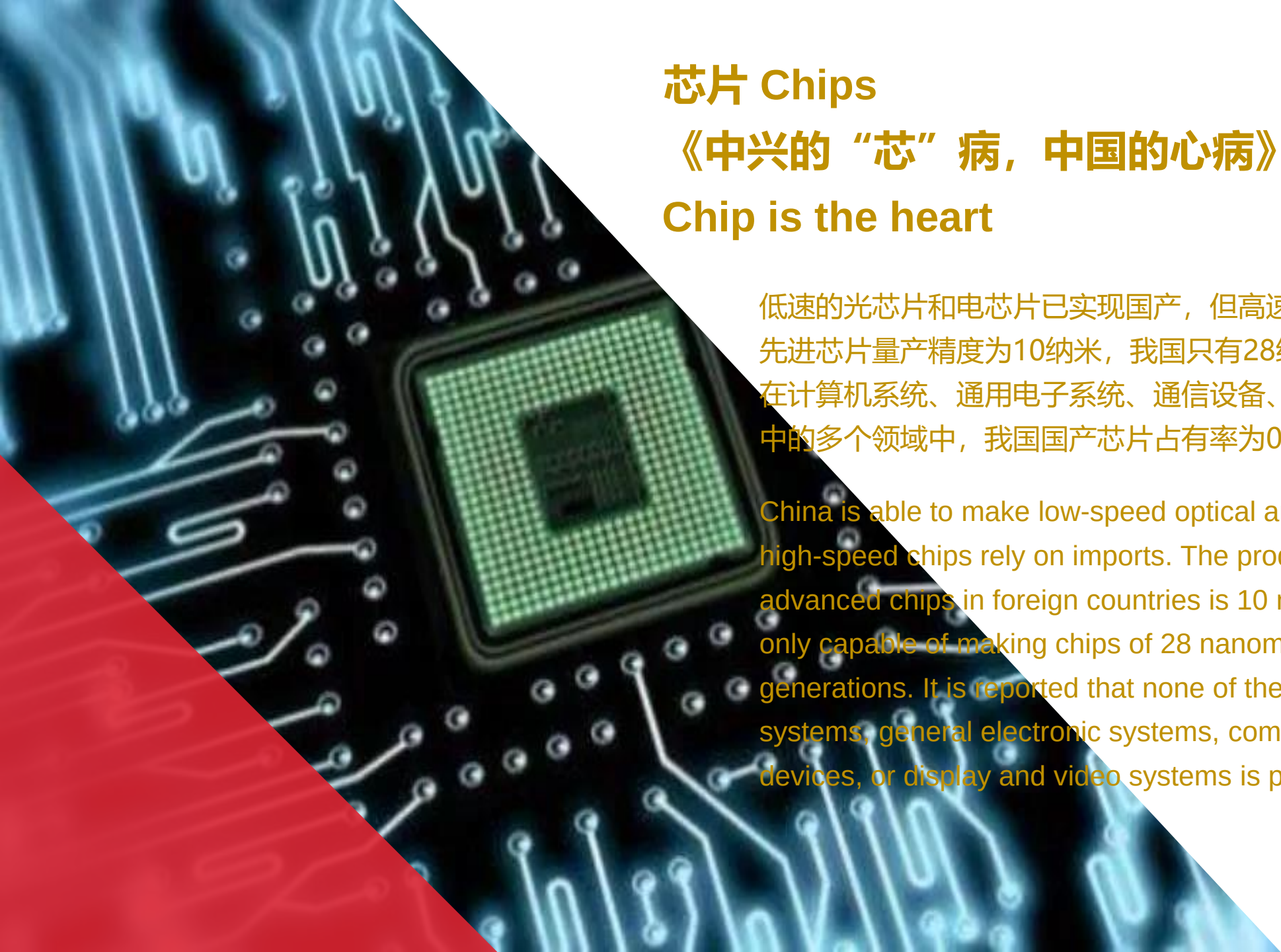
光刻机 Lithography machines

《这些“细节”让中国难望顶级光刻机项背》

Details determine success

制造芯片的光刻机，其精度决定了芯片性能的上限。在“十二五”科技成就展览上，中国生产的最好的光刻机，加工精度是90纳米。这相当于2004年上市的奔腾四CPU的水准。而国外已经做到了十几纳米。

The precision of the lithography machine that manufactures the chip determines the performance of the chips. In the Exhibition on Science and Technology Achievements during the 12th Five-Year Plan Period, the best lithography machine China produces has a precision level of 90 nanometers, equivalent to the CPU level of Pentium IV launched in 2004. At present, the precision level achieved by foreign makers has reached about a dozen nanometers.



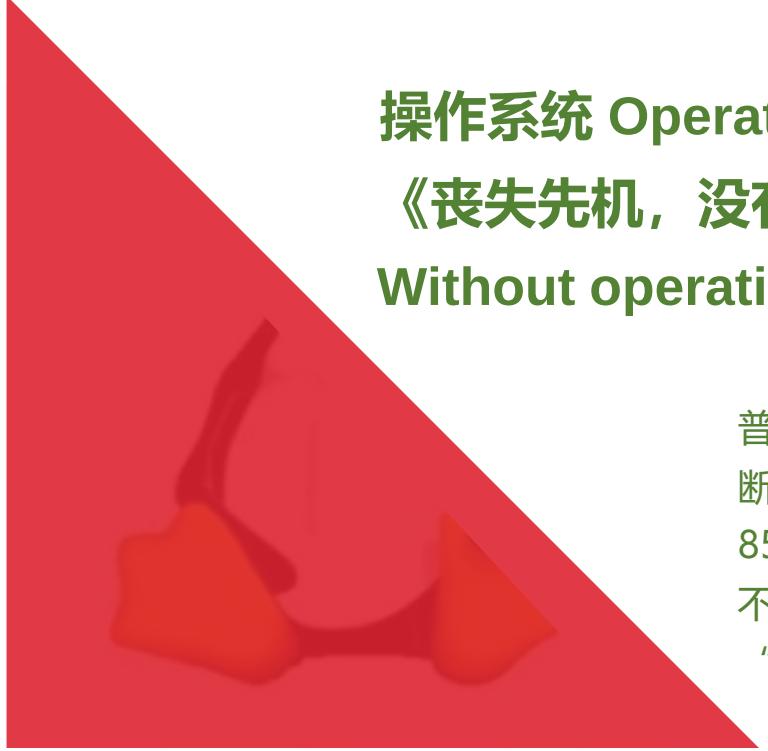
芯片 Chips

《中兴的“芯”病，中国的心病》

Chip is the heart

低速的光芯片和电芯片已实现国产，但高速的仍全部依赖进口。国外最先进芯片量产精度为10纳米，我国只有28纳米，差距两代。据报道，在计算机系统、通用电子系统、通信设备、内存设备和显示及视频系统中的多个领域中，我国国产芯片占有率为0。

China is able to make low-speed optical and electrical chips, but all of high-speed chips rely on imports. The production precision of the most advanced chips in foreign countries is 10 nanometers, but China is only capable of making chips of 28 nanometers, lagging behind by two generations. It is reported that none of the chips used in computer systems, general electronic systems, communication devices, memory devices, or display and video systems is produced by ourselves.



操作系统 Operating systems

《丧失先机，没有自研操作系统的大国之痛》

Without operating system, without supremacy

普通人看到中国IT业繁荣，认为技术差距不大，实则不然。3家美国公司垄断手机和个人电脑的操作系统。数据显示，2017年安卓系统市场占有率达85.9%，苹果IOS为14%。其他系统仅有0.1%。没有谷歌铺路，智能手机不会如此普及，而中国手机厂商免费利用安卓的代价，就是随时可能被“断粮”。

The public only learn about the superficial booming of China’ s IT sector, but they don’ t know the huge technological gap China is facing. Three U.S. companies monopolize the operating systems for mobile phones and personal computers. Statistics show that Android took up 85.9 percent of the market share, IOS accounted for 14 percent, with the remaining 0.1 percent taken by other systems in 2017. Without Google, smartphones would not have such a high penetration. The expense of Chinese phone makers using the Android system for free is that they will lose accessibility to it at any moment.

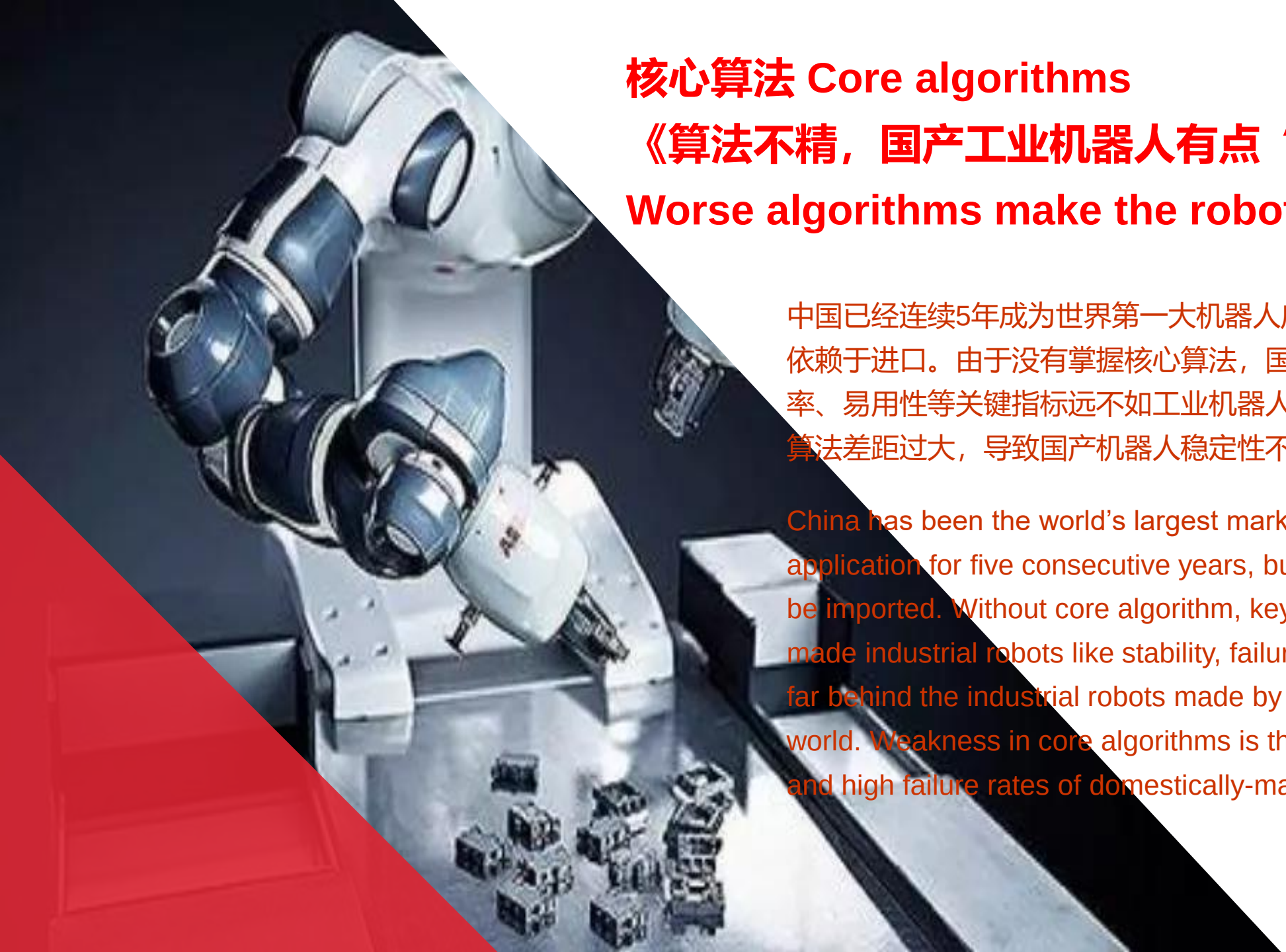
重型燃气轮机 Heavy gas turbines

《“命门火衰”，重型燃气轮机的叶片之殇》

The fatal weakness

燃气轮机广泛应用于舰船、火车和大型电站。我国具备轻型燃机自主化能力；但重燃仍基本依赖引进。没有自主化能力，意味着我国能源安全的重要一环，仍然受制于人，存在被“卡脖子”的风险。

Gas turbines are widely used in ships, trains and large power plants. China is capable of making automate light-duty gas turbines, but has to rely on importing heavy gas turbines. Without the ability to make them by ourselves, one key area of our energy security is subject to our countries and we might be in danger at any time.



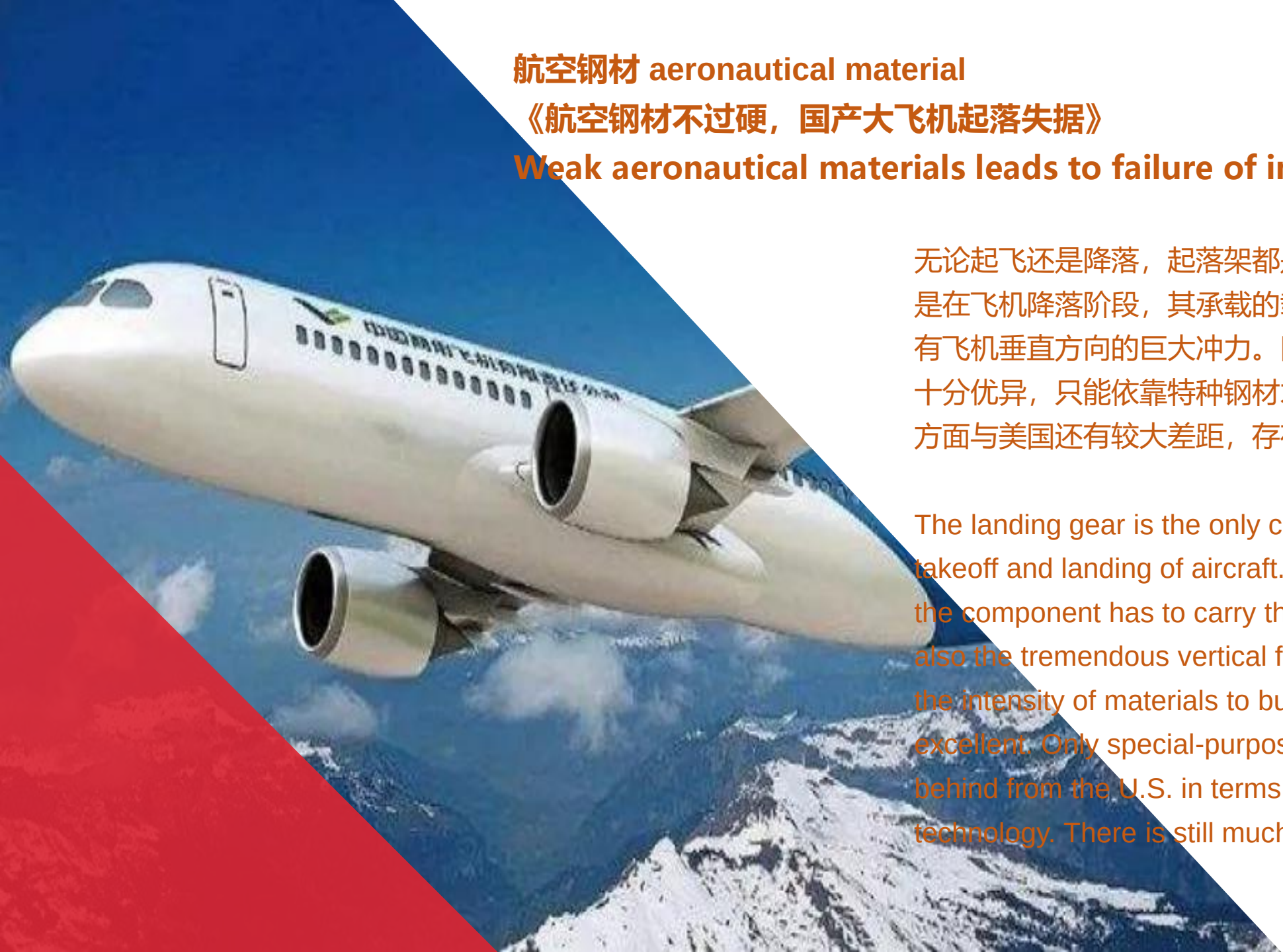
核心算法 Core algorithms

《算法不精，国产工业机器人有点“笨”》

Worse algorithms make the robot silly

中国已经连续5年成为世界第一大机器人应用市场，但高端机器人仍然依赖于进口。由于没有掌握核心算法，国产工业机器人稳定性、故障率、易用性等关键指标远不如工业机器人“四大家族”的产品。核心算法差距过大，导致国产机器人稳定性不佳，故障率居高不下。

China has been the world’s largest market for robot technology application for five consecutive years, but its upmarket robots have to be imported. Without core algorithm, key indicators of domestically-made industrial robots like stability, failure rate and feasibility still lag far behind the industrial robots made by four major producers in the world. Weakness in core algorithms is the reason for poor stability and high failure rates of domestically-made robots.



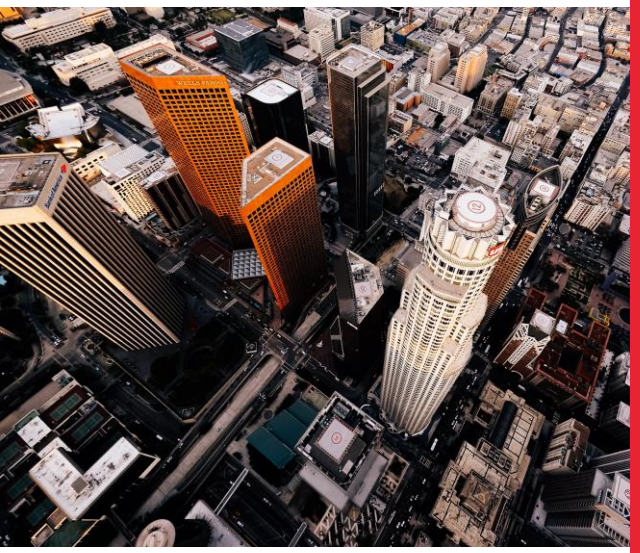
航空钢材 aeronautical material

《航空钢材不过硬，国产大飞机起落失据》

Weak aeronautical materials leads to failure of indigenous large aircraft

无论起飞还是降落，起落架都是支撑飞机的唯一部件，尤其是在飞机降落阶段，其承载的载荷不仅仅来自机身重量，还有飞机垂直方向的巨大冲力。因此，起落架的材料强度必须十分优异，只能依靠特种钢材才行。我国在高纯度熔炼技术方面与美国还有较大差距，存在很大提升空间。

The landing gear is the only component that supports the takeoff and landing of aircraft. Particularly in the landing, the component has to carry the weight of the fuselage, but also the tremendous vertical forces of impulsion. Therefore, the intensity of materials to build the landing gear should be excellent. Only special-purpose steel fits. But we still lag behind from the U.S. in terms of high-purity smelting technology. There is still much room for improvement.



在强调合作共赢时要保持清醒的头脑，搞清楚：

- 哪些技术可以和别人共同开发，
- 哪些可以引进消化吸收再创新，
- 哪些可以引进但必须安全可控，
- 哪些今天不得不引进但将来要实现国产替代，
- 哪些必须依靠自己的力量开展攻关并取得突破。

We should keep clear mind on the following issues when stressing win-win cooperation:

- Which technologies can we co-developed with foreign partners?
- Which technologies can we make innovation based on introduction?
- Which technologies can we introduce but well ensure the safety?
- Which technologies must we produce by ourselves in the future?
- Which technologies must we rely on ourselves to achieve breakthroughs?

240 $

一部在中国完成组装，然后运往美国的出厂价为240美元的苹果手机，商务部门会将这240美元的出厂价直接算入美国对中国的贸易逆差中去。

If an iPhone is assembled in China and delivered to the United States and sold there at an ex-works price of USD240, the commerce authority will include the price directly into the trade deficit of the United States to China.

8.46 $

这240美元中有超过一半的价值被苹果公司等提供专利核心技术的企业赚走，中国真正从这部手机上赚取的只有区区8.46美元，仅占出厂价的3.6%

Over half of the USD240 is earned by firms including Apple that provide patented core technologies, and China earns merely USD8.46 from the iPhone, accounting for 3.6% of the price.

By JASON DEDRICK, GREG LINDEN AND KENNETH L. KRAEMER / THE CONVERSATION / *July 9, 2018, 4:45 AM*

China makes $8.46 from an iPhone. That's why a U.S. trade war is futile

Share / Tweet / Reddit / Flipboard / Email

Jason Dedrick, professor at Syracuse University; Greg Linden, research associate at University of California, Berkeley; and Kenneth L. Kraemer, research professor at University of California, Irvine.

The Trump administration's tariffs on China have so far targeted mostly industrial goods like aircraft engines and gas compressors. But the administration has also threatened to slap tariffs on $200 billion in other goods if the dispute continues.

No list of goods has been released, but the list would have to include consumer electronics, such as smartphones, which is the largest single product category in China's exports to the U.S.

One well-known product that might be affected is Apple's iPhone, which is assembled in China. When an iPhone arrives in the U.S., it is recorded as an import at its factory cost of about $240, which is added to the massive U.S.-China bilateral trade deficit.

越是以开放的心态拥抱全球创新，就越是要求我们尽可能多地把核心技术掌握在自己手里，绝不能让自己生疏了“手艺”。

The more open attitude we hold toward global innovation, the more core technologies we should hold in our own hands. We should not distance ourselves from craftsmanship.

中国的自主创新之路，是一条既不排斥“拿来主义”，又强调以我为主的知易行难之路。
它是开放的，鼓励合作共赢；它又是自主的，体现自己的意志和意图。
只有这样，才能在自主创新中扩大开放，在扩大开放中实现更高层次上的自主创新。

In pursuing independent innovation, China doesn’t reject learning from foreign countries, but it values autonomous efforts and devotion. China is open and encourages win-win cooperation, while it is autonomous and has its own intentions and purposes. Only in this way, we can expand openness in independent innovation, and attain high-level independent innovation as we become more open up to the outside world.

PART 04

用科学精神引领未来

The spirit of science steers the course to the future

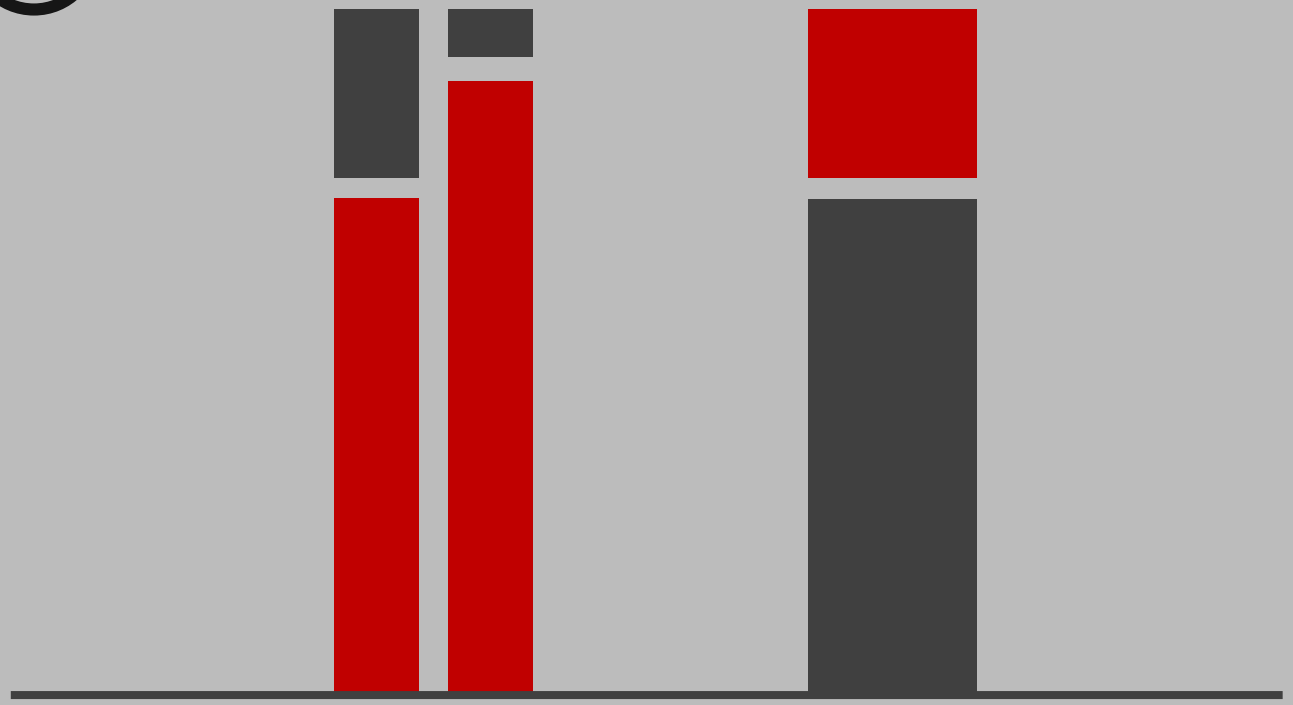
西学东渐
The spread of the Western learning to the East

中国从士大夫到平民的各个阶层，对宗教不感兴趣，对科学也不买账。

1840年，西方列强用坚船利炮开路，把鸦片和科学一起打包，硬塞给了中国。你收也得收，不收也得收，粗鲁得很！

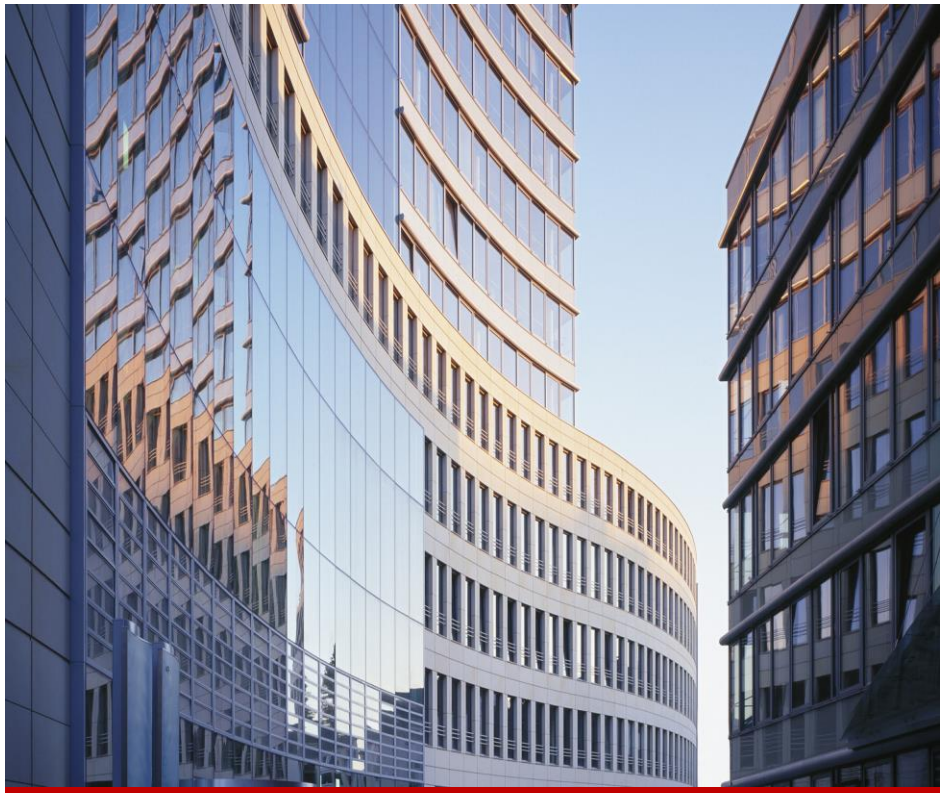
Chinese people of all social classes, from highly-ranked officials to ordinary people, used to show no interest in religion nor value science.

In 1840, the Western powers packed opium and science and forced them to China with gun power. We had no choice but to accept. It was rude!



处于同样的发展阶段时，日韩用于引进和消化吸收经费是1比3，高的领域达到1比7或1比8。但我国正好相反，引进和消化吸收的经费是3比1。

The ratio of R&D funding for introducing and that for absorbing is 1:3 in Japan and South Korea at the same development stage, with some sectors reaching 1:7 or 1:8. The situation in China is the opposite, with the ratio standing at 3:1.



离开科学精神的指引，技术的发展注定不会走得久远。

Without the guidance of the spirit of science, technology development is doomed to failure.

我们的集成电路项目几上几下，我们的大飞机项目也几上几下。这些说明，我们有时缺乏持之以恒把事情做到底的意志和决心。

Ups and downs regarding the integrated circuit project and large passenger aircraft project reflect that we sometimes lack the determination and resolution to persevere in getting things done.

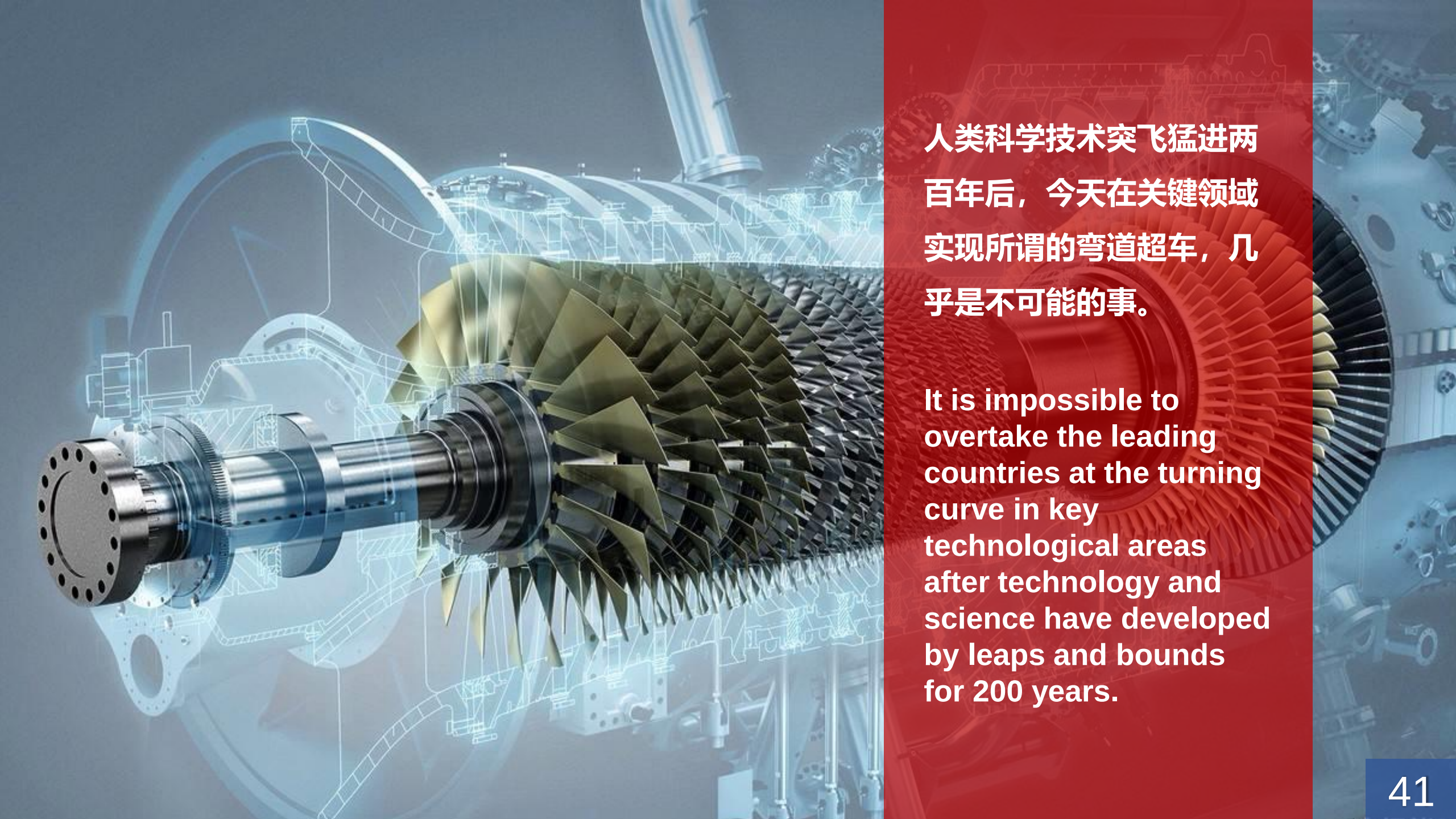
1789年9月，21岁的英国纺织工人萨缪尔·斯莱特（Samuel Slater），在伦敦泰晤士河码头登船去往美国。他脑子里的图纸和知识，是美国在十八世纪获得的最宝贵的一笔知识产权资产。

斯莱特后来被美国人称之为“美国工业革命之父”，在他的老家英国，他有一个简短却响亮的名字：“叛徒斯莱特”。

In September 1789, 21-year-old Samuel Slater, a British cotton mill worker, boarded a ship to the United States on the Thames in London. The drafts and knowledge in his brain are the most valuable intellectual property assets the U.S. got in the 18th century.

Slater was later dubbed “the father of the American Industrial Revolution” by Americans. But back his hometown, he had a nickname: traitor Slater.

G 22585 Old Slater Mill, First Cotton Mill in United States, Pawtucket, R. I.



人类科学技术突飞猛进两百年后，今天在关键领域实现所谓的弯道超车，几乎是不可能的事。

It is impossible to overtake the leading countries at the turning curve in key technological areas after technology and science have developed by leaps and bounds for 200 years.

科技日报

SCIENCE AND TECHNOLOGY DAILY

弘扬科学精神，传播科学思想，
倡导科学方法，普及科学知识。

Promoting the spirit of science and technology, spreading science notions, advocating scientific methods and making sciences widely attainable.

微信公众号“报人刘亚东”
Scan the QR Code to follow my Official WeChat Account