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MAKING SENSE OF CHINA'S INFORMATION EXPLOSION

A REVIEW OF INFORMATION SOURCES AND ANALYSIS TECHNIQUES THAT
CAN HELP ADDRESS THE CHALLENGES

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CHINA IS FOCUSED ON DRIVING CHANGE IN ITS ECONOMY TO ENSURE THAT PROSPERITY IS BUILT INCREASINGLY ON INNOVATION.



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AGENDA

- Chinese future developments
 - Scientific trends
 - Patent volume trends
 - Domestic vs foreign filing trends
 - Technology trends
- Information sources & techniques



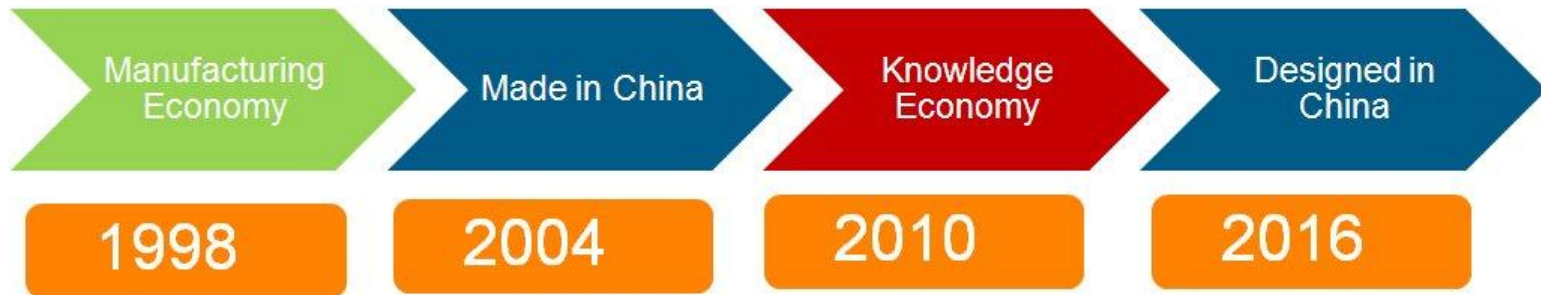
CHINESE INNOVATION: AN INTRODUCTION

- Until recently, China was the third largest patent office in the world after the US and Japan
- Published applications increased by 16.7% per year from 171,000 in 2006 to 314,000 in 2010
- Global citation ranking has moved from 13th in 2006 to 8th in 2010
- Now ranked 29th on Global Innovation Index, the only developing country among the top 30
- World's longest sea bridge at 26.4 miles long; world's largest high-speed railway system with around 10,500 miles completed



DRIVING FORCES

China's 12th Five Year Strategic Plan



- **Targets**

- increase in R&D expenditure as a proportion of GDP from 1.75% in 2010 to 2.2% in 2015;
- improvement in ranking of citations in international science papers from 8th to 5th;
- increase in invention patent ownership per 10,000 head of population from 1.7 to 3.3

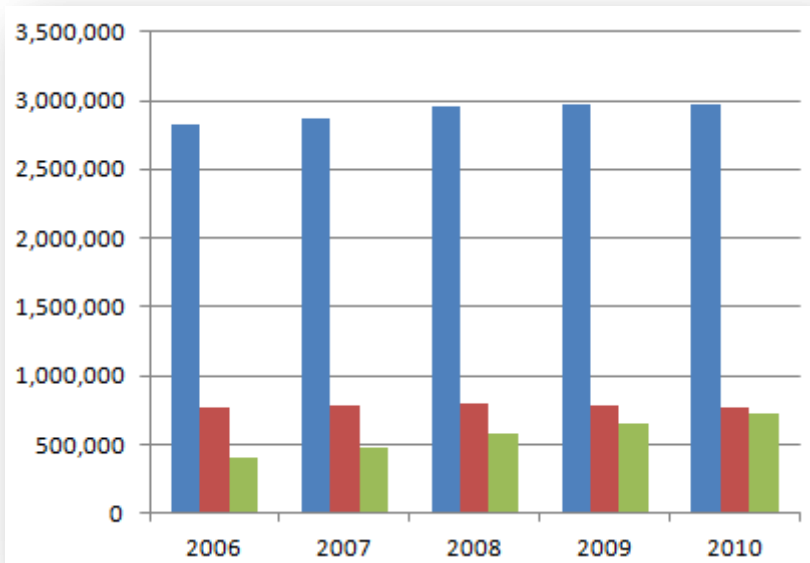


CHINESE INNOVATION: SCIENTIFIC LIT

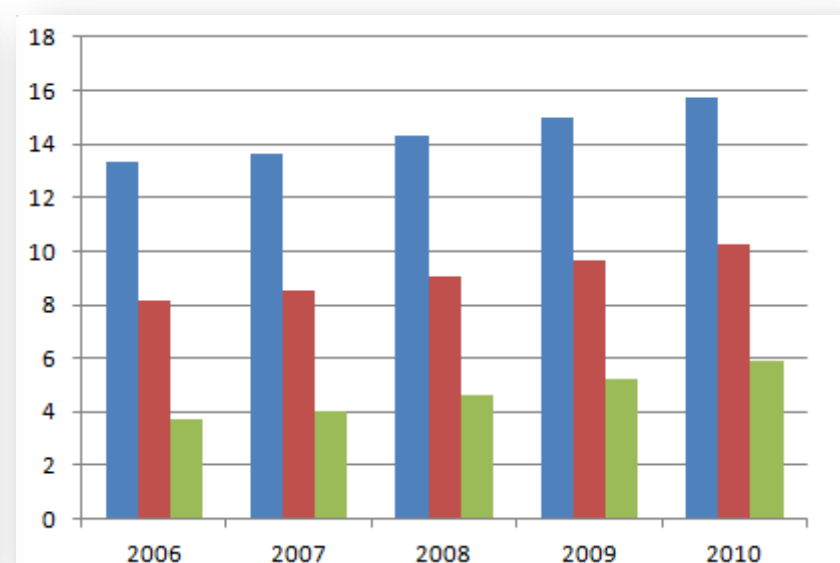
US leads in output of scientific literature and in the number of citations to those papers, however China is experiencing the fastest growth

SCIENTIFIC LITERATURE OUTPUT
% change for period (2006 – 2010)
CN = 80%, US = 5%, JP = (.2%)

LITERATURE CITATIONS PER PAPER
% change for period (2006 – 2010)
CN = 59%, JP = 25%, US = 18%



■ USA
■ JAPAN
■ CHINA



■ USA
■ JAPAN
■ CHINA

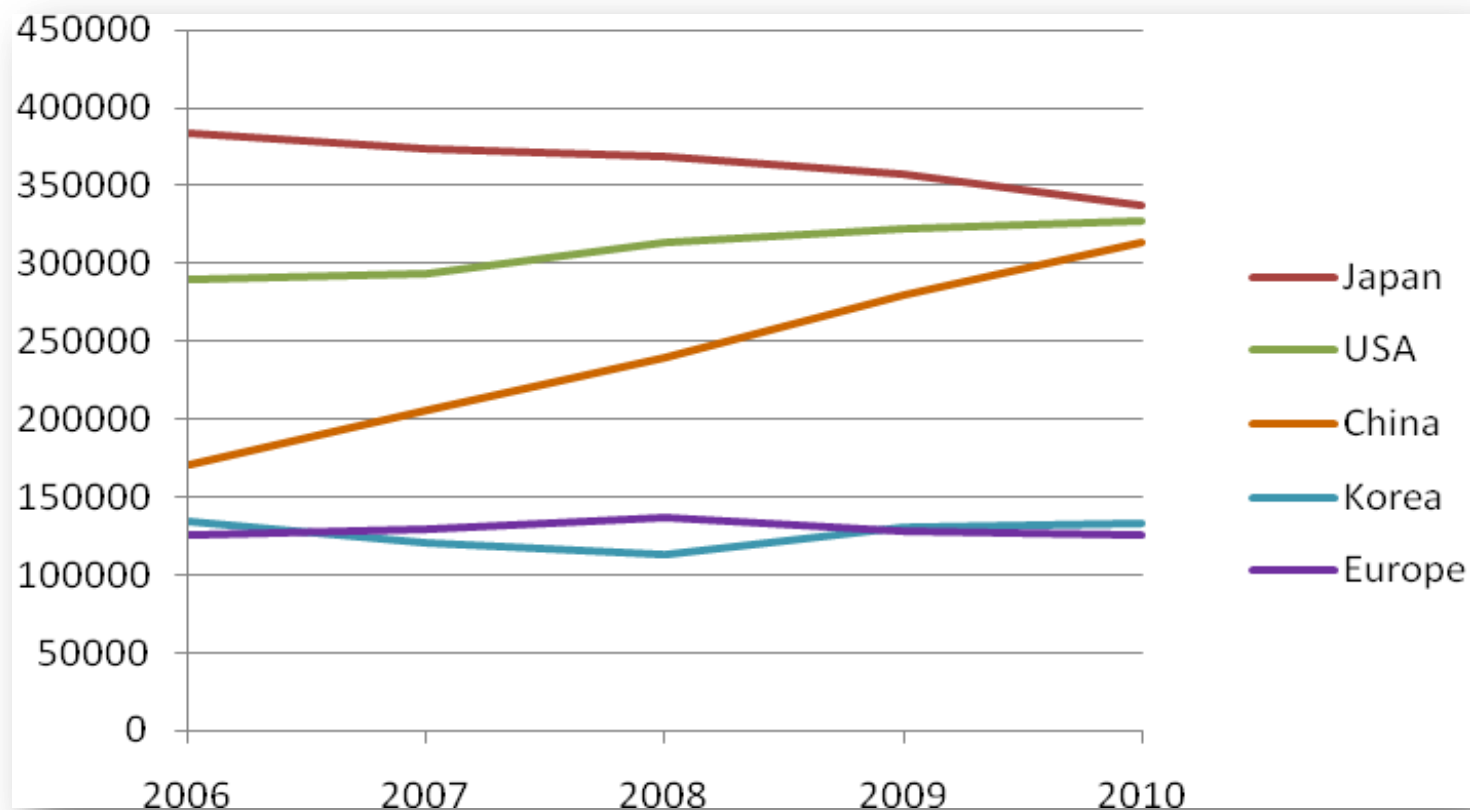
CHINA'S RANKING BY SCIENTIFIC CITATIONS

Ranking	2006	2007	2008	2009	2010
1st	USA	USA	USA	USA	USA
2nd	ENGLAND	ENGLAND	GERMANY	GERMANY	ENGLAND
3rd	GERMANY	GERMANY	ENGLAND	ENGLAND	GERMANY
4th	JAPAN	JAPAN	JAPAN	JAPAN	JAPAN
5th	FRANCE	FRANCE	FRANCE	FRANCE	FRANCE
6th	CANADA	CANADA	CANADA	CANADA	CANADA
7th	ITALY	ITALY	ITALY	ITALY	ITALY
8th	NETHERLANDS	NETHERLANDS	NETHERLANDS	NETHERLANDS	CHINA
9th	AUSTRALIA	AUSTRALIA	AUSTRALIA	CHINA	NETHERLANDS
10th	SWITZERLAND	SWITZERLAND	CHINA	AUSTRALIA	AUSTRALIA
11th	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN
12th	SWEDEN	SWEDEN	SWITZERLAND	SWITZERLAND	SWITZERLAND
13th	CHINA	CHINA	SWEDEN	SWEDEN	SWEDEN

Source: Thomson Reuters Essential Science Indicators®

TRENDS IN CHINESE INNOVATION

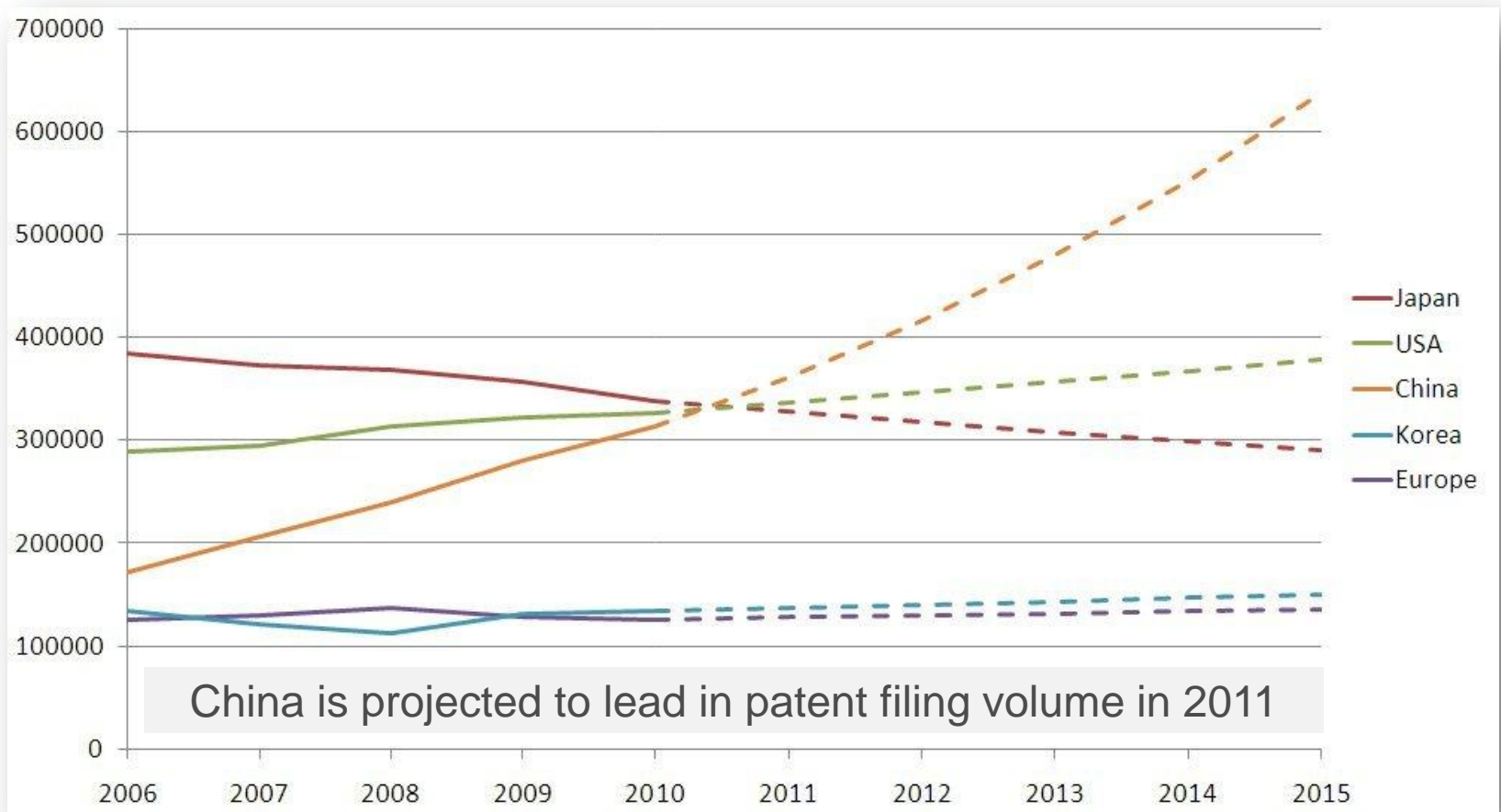
TOTAL PATENT APPLICATION VOLUMES 2006 – 2010



Source: Derwent World Patents Index® and Thomson Innovation®

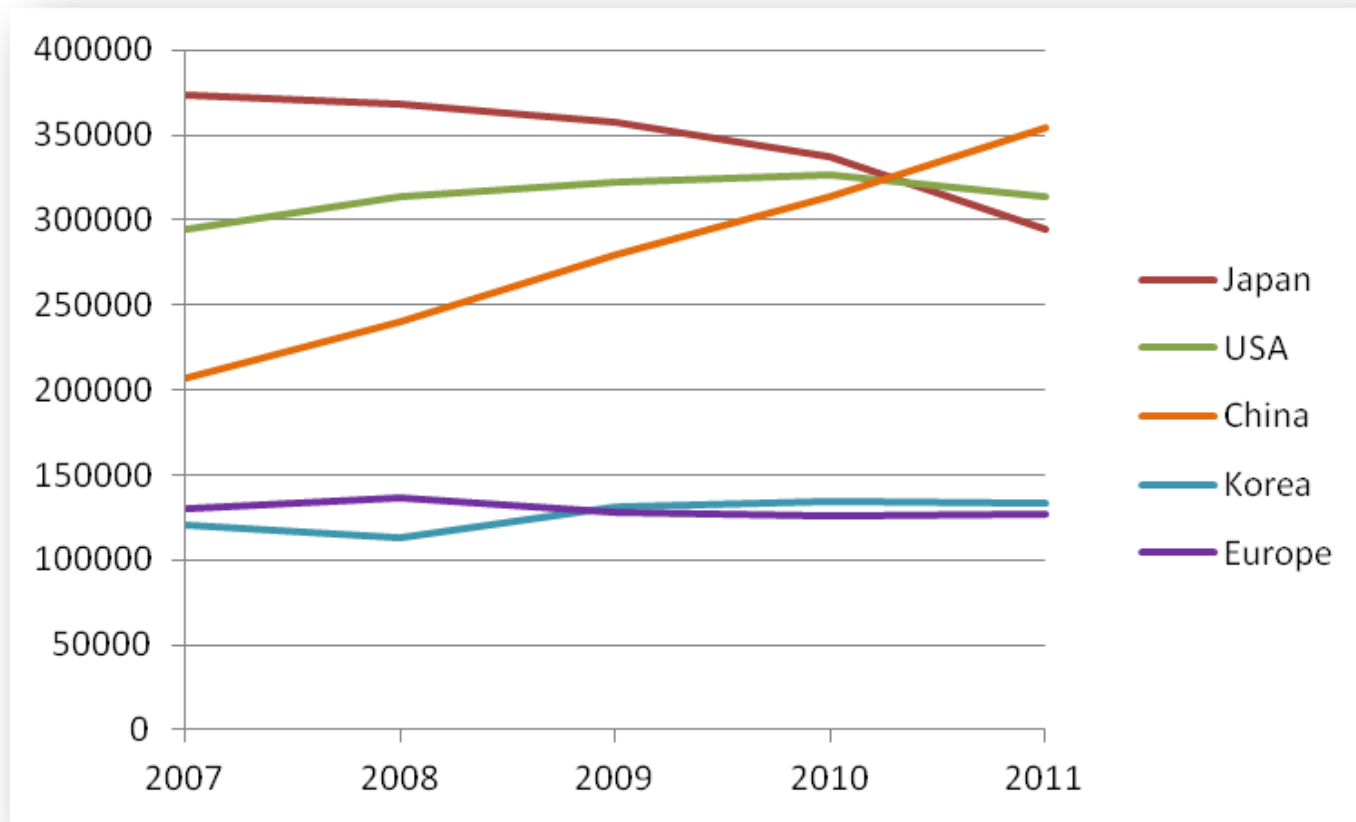
TRENDS IN CHINESE INNOVATION

PROJECTED TOTAL PATENT APPLICATION VOLUMES 2006 – 2015



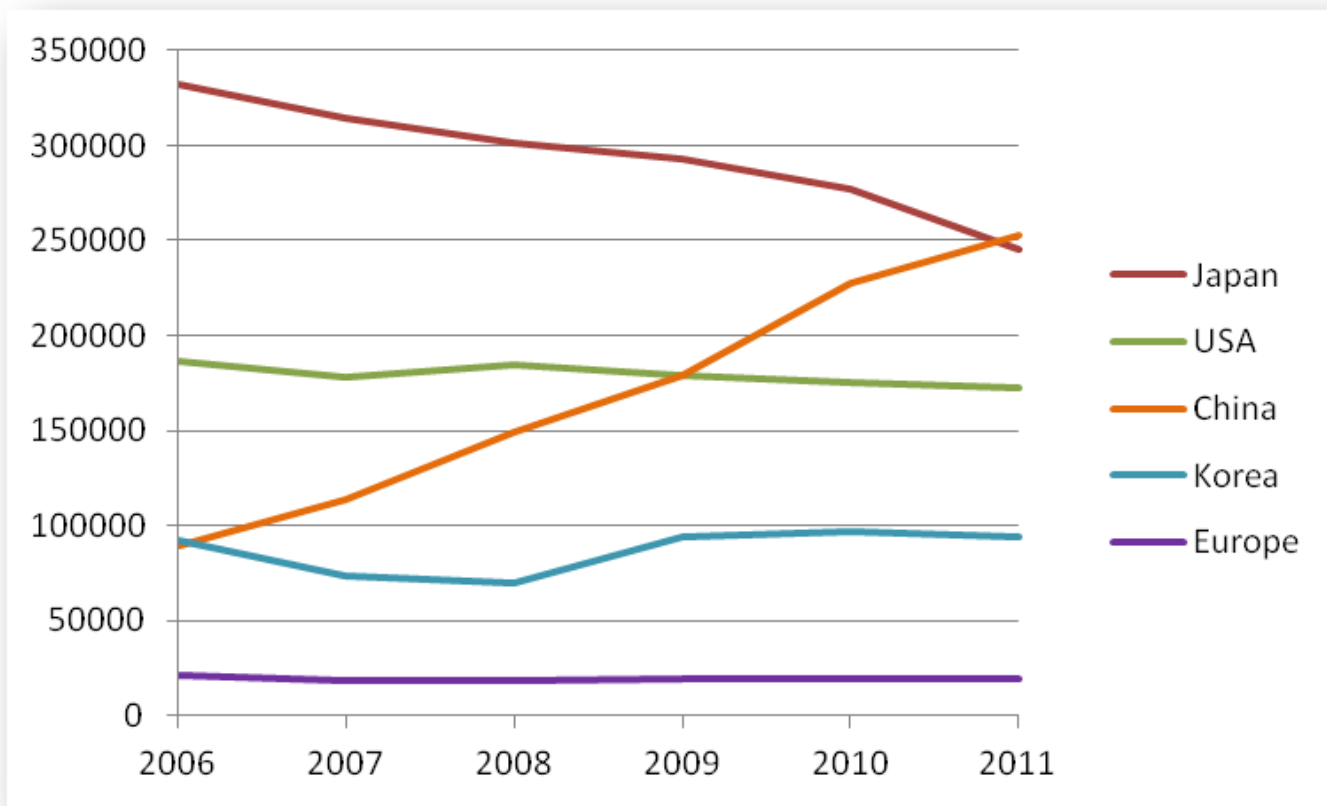
CHINA HAS SURPASSED BOTH THE US AND JAPAN

TOTAL PATENT APPLICATION VOLUMES 2007 – 2011



TRENDS IN CHINESE INNOVATION

DOMESTIC PATENT APPLICATION VOLUMES 2006-2011

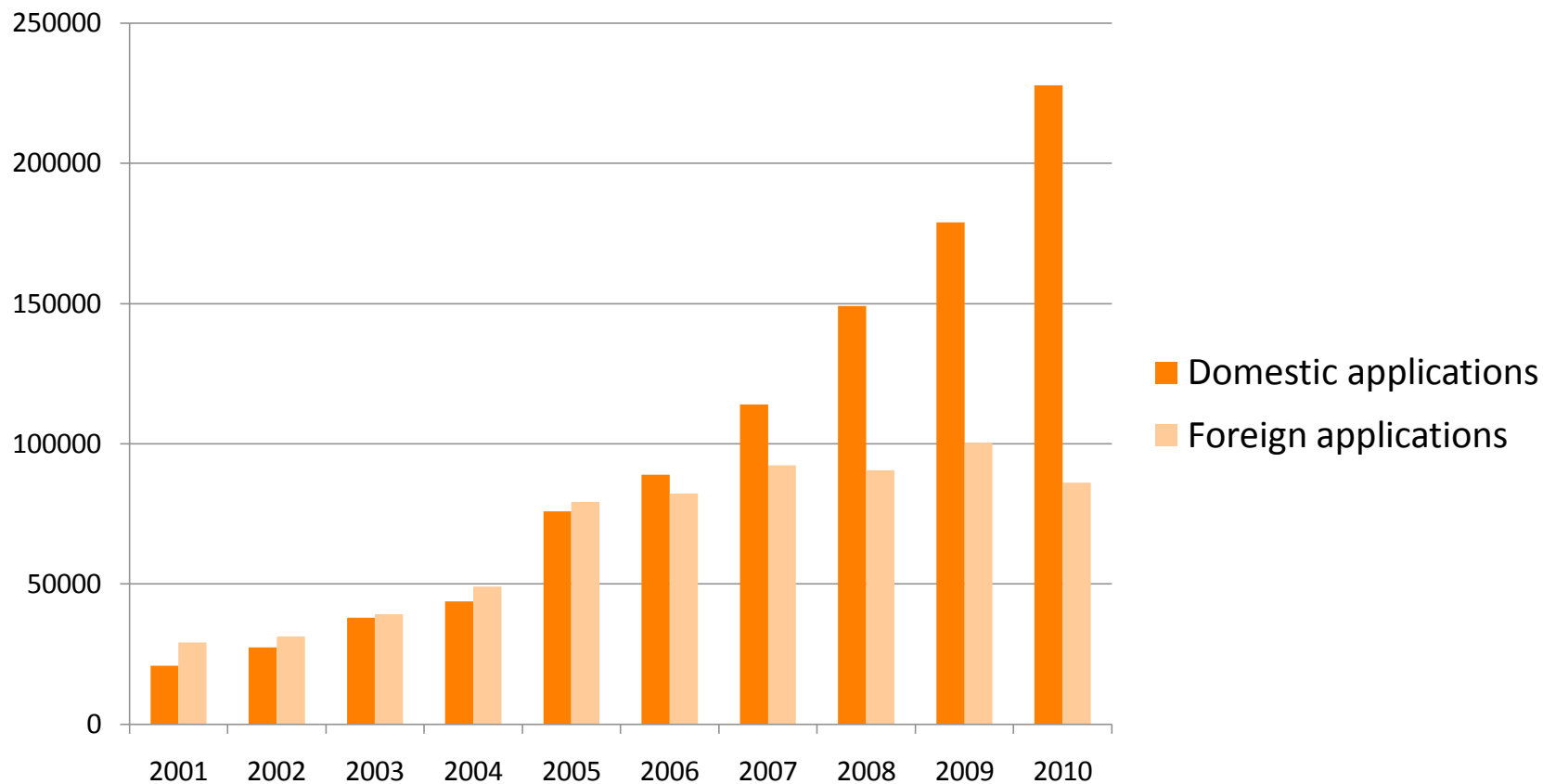


Source: Derwent World Patents Index® and Thomson Innovation®

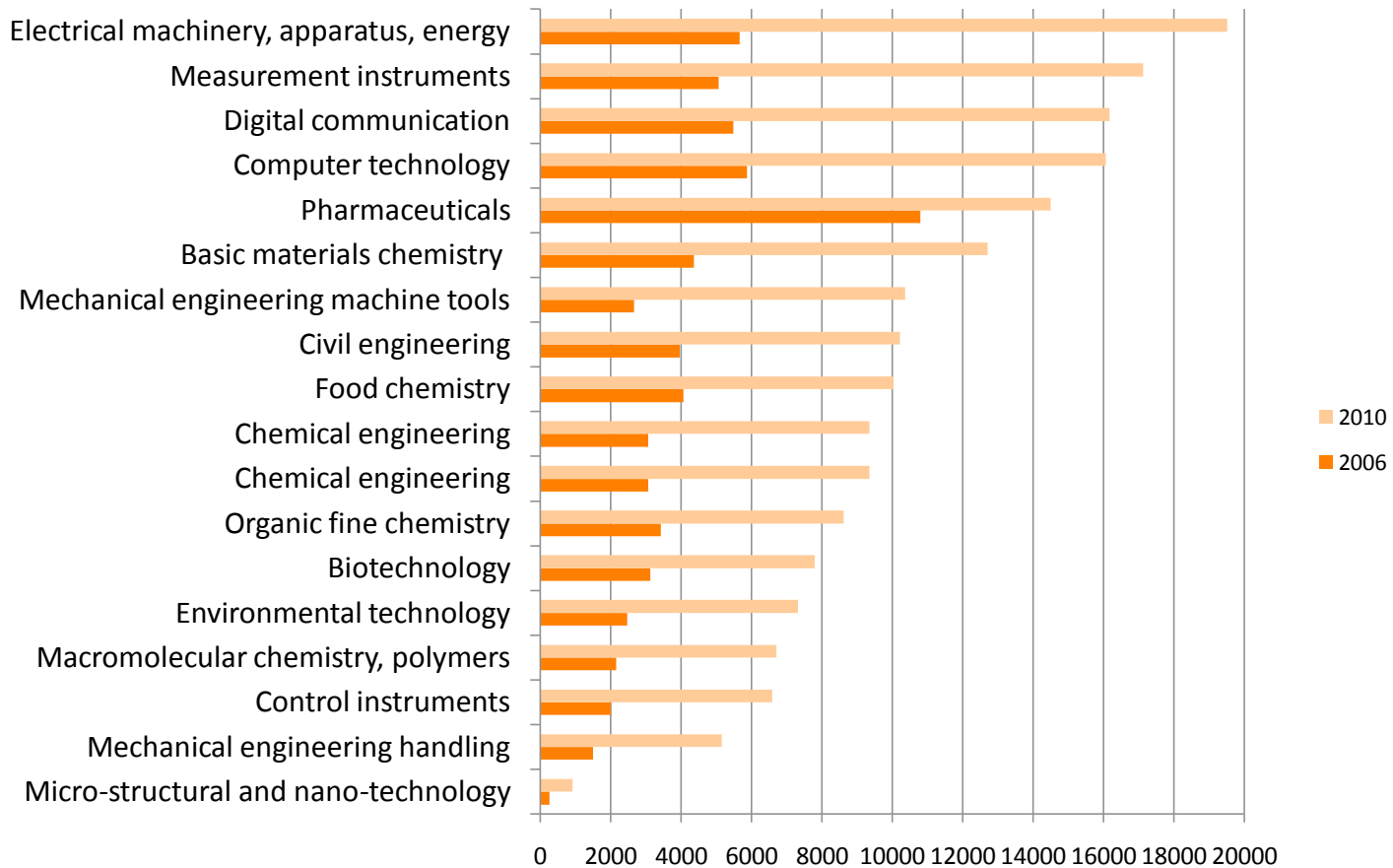
DOMESTIC VS. TOTAL PATENT VOLUMES

Ratio of domestic to total applications	2006	2007	2008	2009	2010	2011	Average
Japan ↓	86.6%	84.4%	81.9%	81.9%	82.1%	83.1%	83.3%
US ↓	64.4%	60.7%	58.9%	55.6%	53.6%	55.0%	58.0%
Europe →	16.5%	14.2%	13.7%	15.4%	15.1%	15.2%	15.0%
Korea →	69.0%	61.1%	61.7%	72.0%	72.8%	69.9%	67.8%
China ↑	51.9%	55.2%	62.2%	64.1%	72.7%	71.2%	62.9%

CHINESE INNOVATION IS HOME GROWN



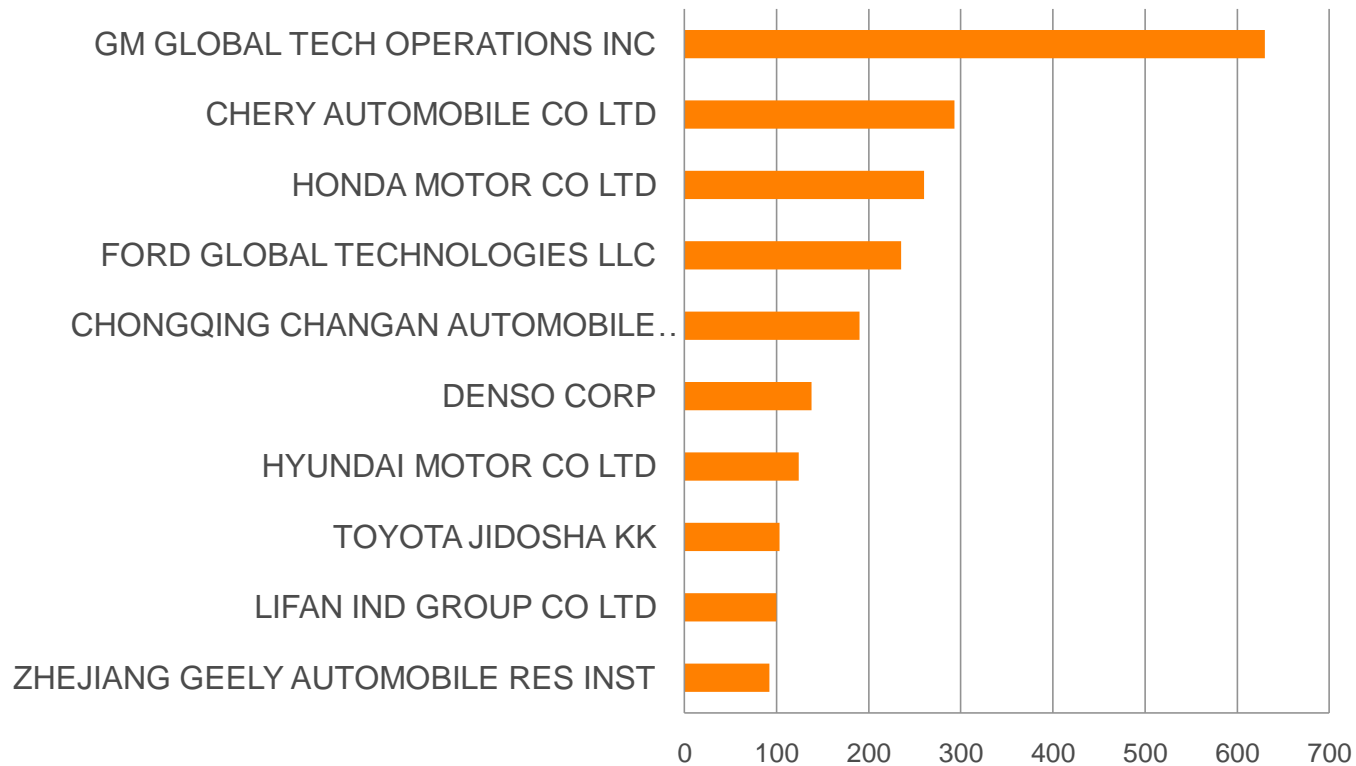
DOMESTIC PATENTS BY TECHNOLOGY



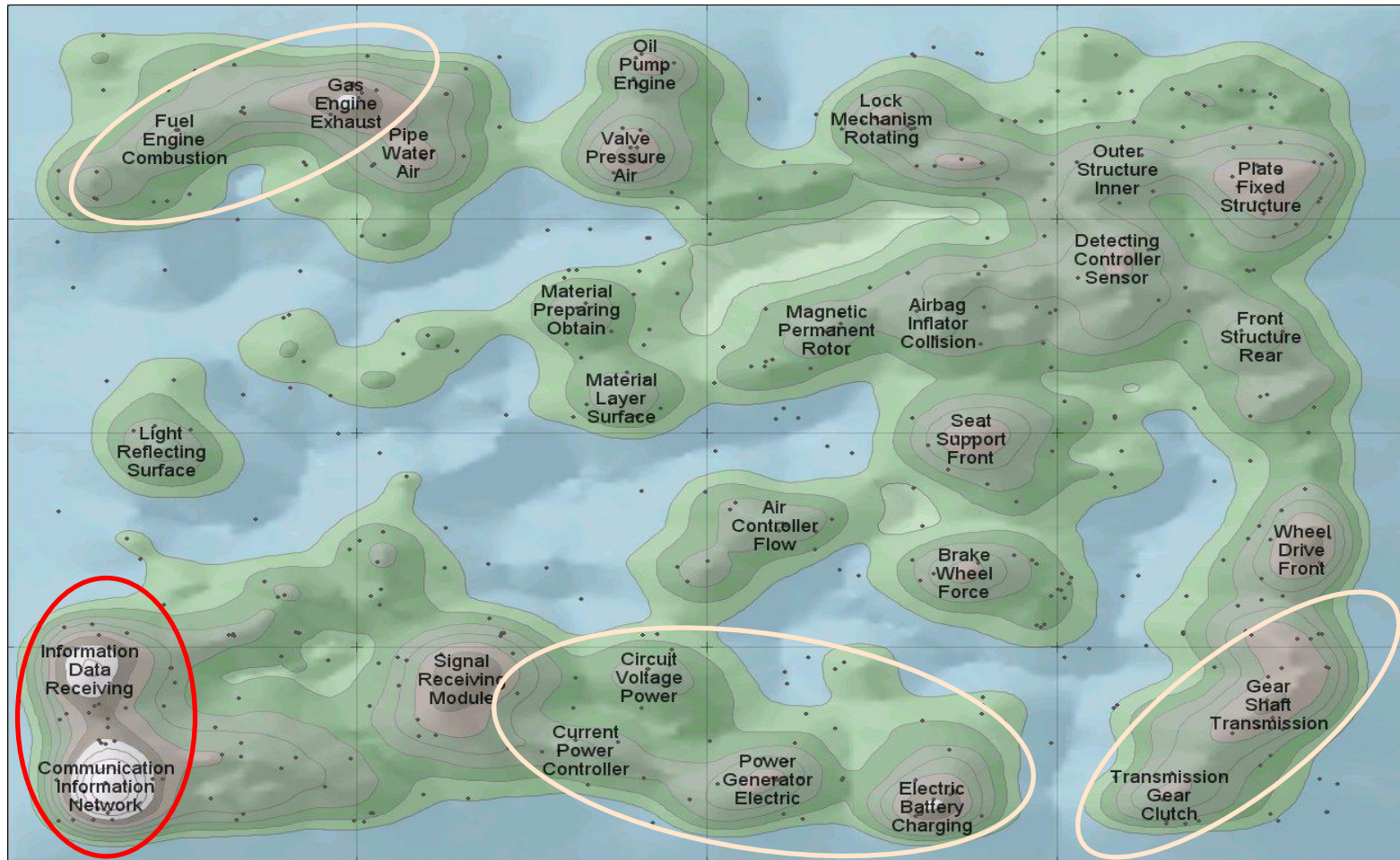
Source: Derwent World Patents Index® and Thomson Innovation®

CHINESE AUTOMOTIVE SECTOR – DOMESTIC AND FOREIGN FILINGS

Automotive companies with patent applications in China 2010

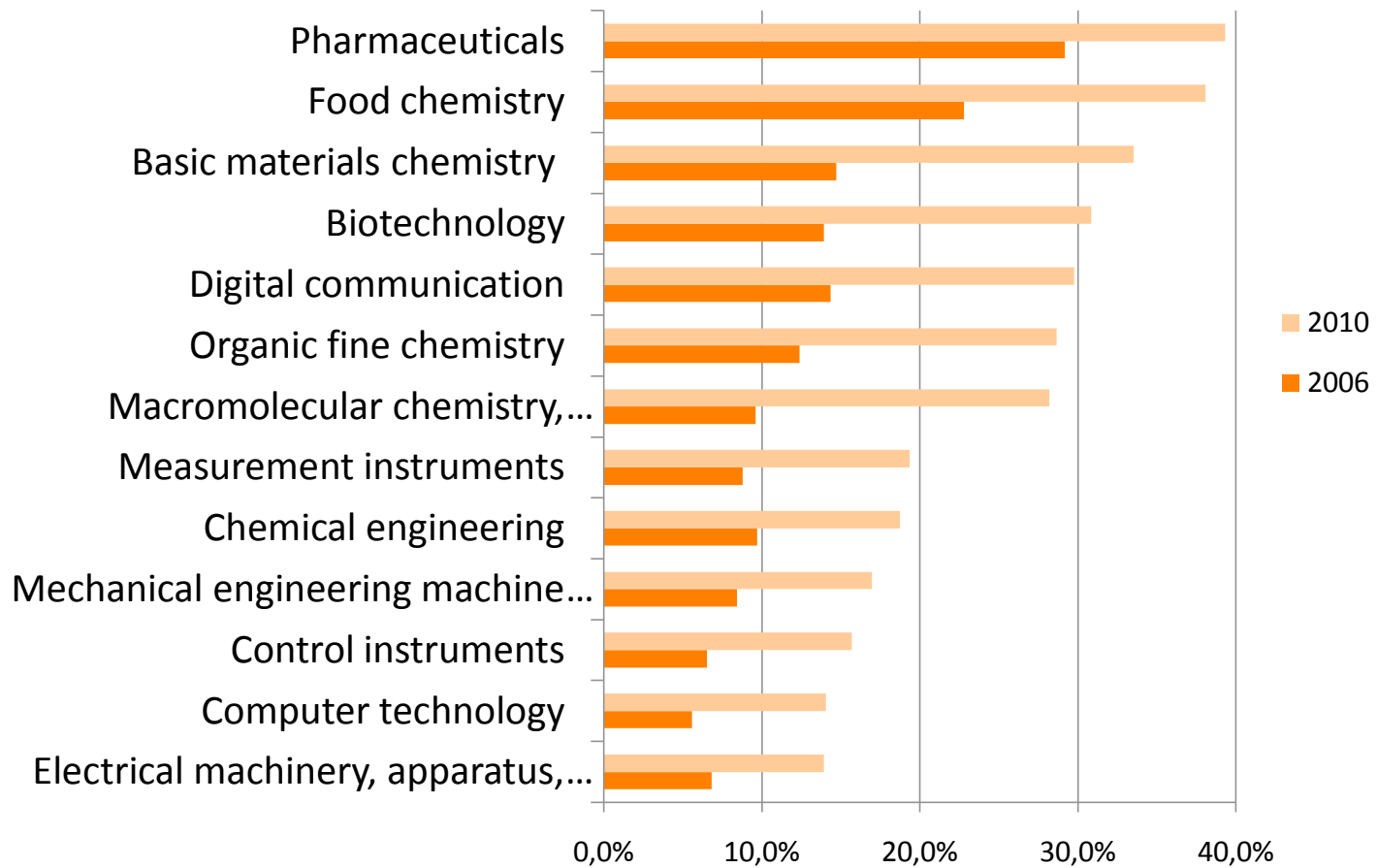


CHINESE AUTOMOTIVE PATENT LANDSCAPE



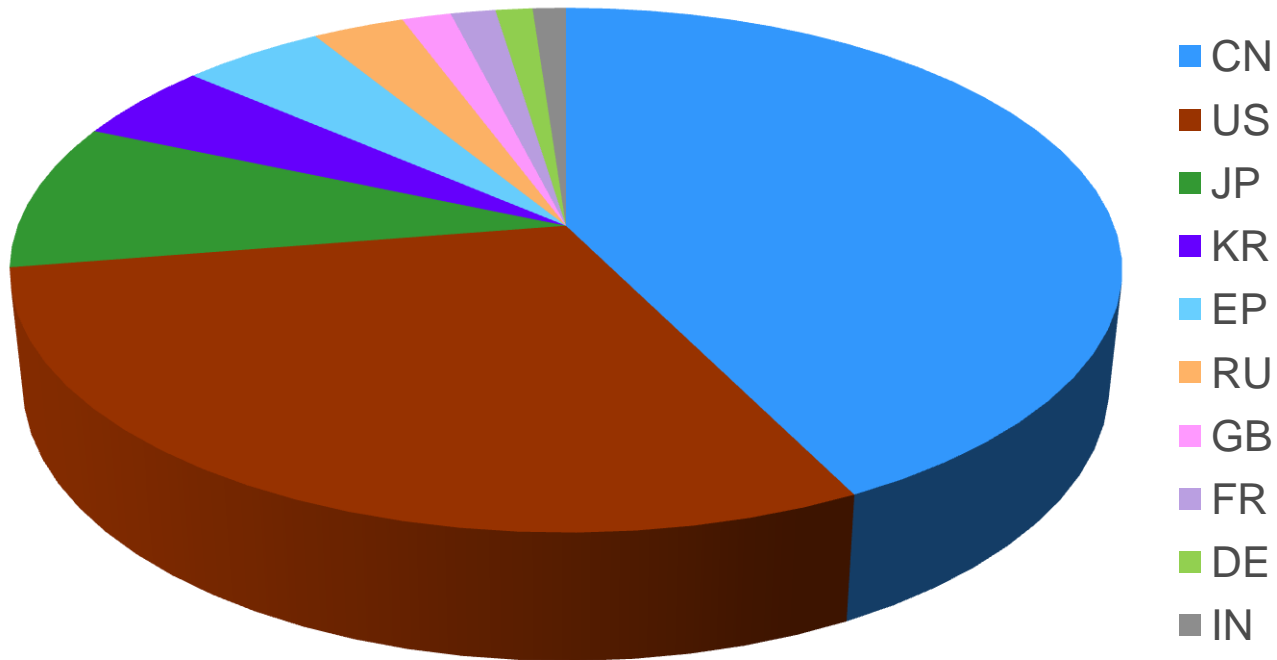
Source: Derwent World Patents Index® and Thomson Innovation®

CHINESE DOMESTIC PATENTS – GLOBAL SHARE



Source: Derwent World Patents Index® and Thomson Innovation®

PHARMACEUTICAL SECTOR: GLOBAL PATENT DISTRIBUTION



Source: Derwent World Patents Index® and Thomson Innovation®

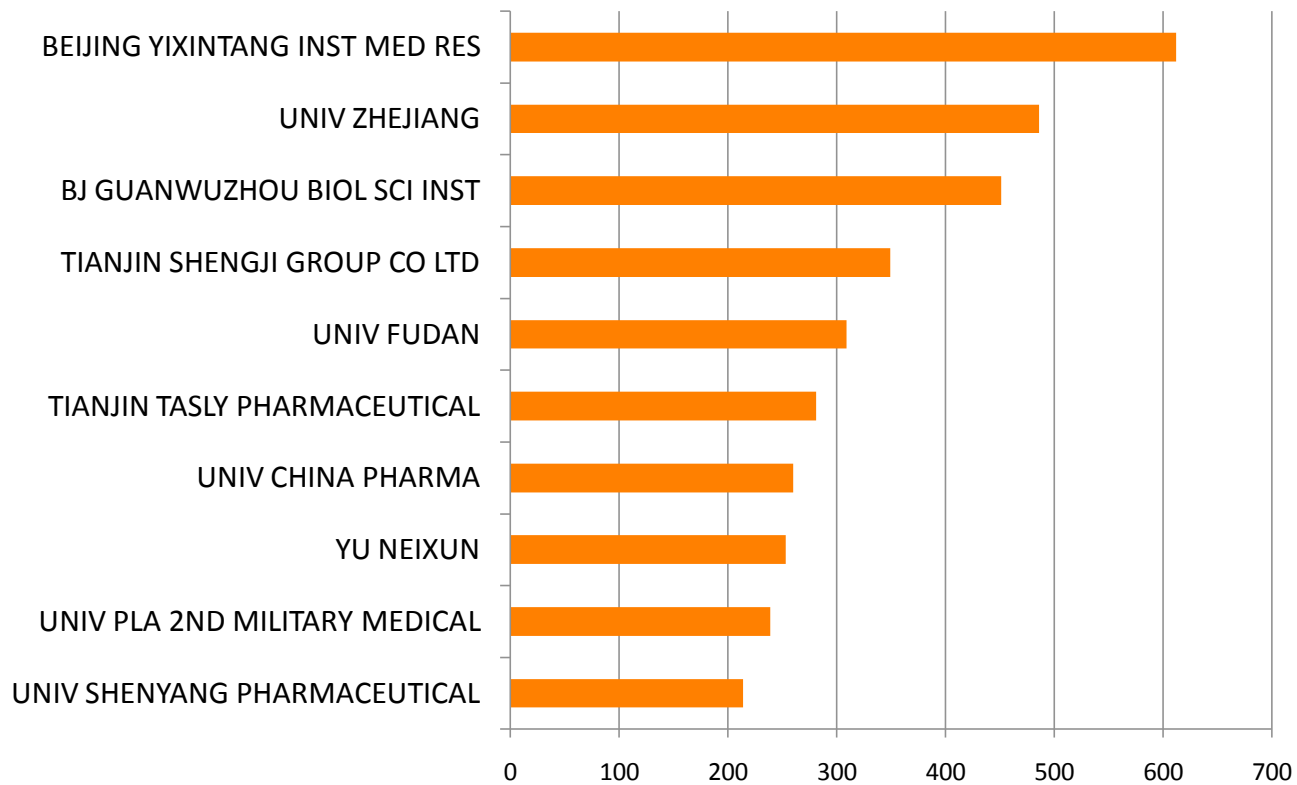
CHINESE PHARMACEUTICAL SECTOR – TRADITIONAL VS “WESTERN” MEDICINE

YEAR	ALL PHARMA	TRADITIONAL MEDICINE	NON-TRADITIONAL
2006	10,799	6,967	3,832
2007	12,658	8,513	4,145
2008	12,246	7,820	4,426
2009	12,833	7,798	5,035
2010	14,005	8,111	5,894

Source: Derwent World Patents Index® and Thomson Innovation®

CHINESE PHARMACEUTICAL SECTOR – DOMESTIC FILINGS

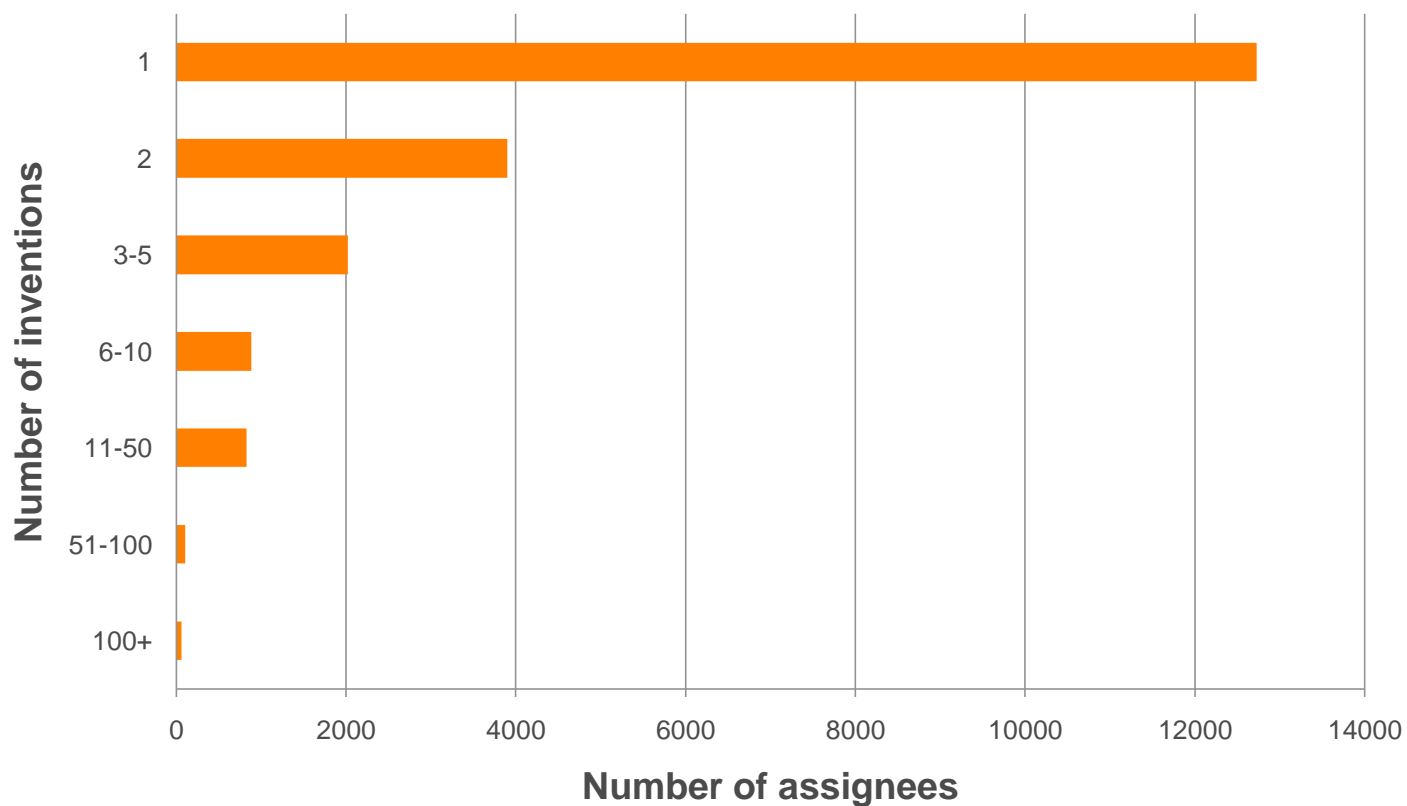
**Top 10 Chinese assignees in Pharma
2006-2010**



Source: Derwent World Patents Index® and Thomson Innovation®

THE CHINESE PHARMA INVENTION TAIL

Distribution of Chinese Pharma assignees by number of patents 2006-2010



Source: Derwent World Patents Index® and Thomson Innovation®

CHINESE PATENTING TRENDS: METHODOLOGY

- Measurable attributes used to track innovation trends:
 - Total published patent application volume
 - Local priority patent applications volumes
 - International patent application volumes

Data from DWPI was analyzed to determine trends in patenting according to the numbers of published patent applications



EXAMPLE OF TECHNIQUES – FUDAN UNIVERSITY

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2 **Enter Criteria:**

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(UNIV* adj FUDAN) OR (FUDAN adj UNIV*)

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Person

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Timeframe

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From: 2007

To: 2012

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26,253 matches found

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Patent (4586)

Literature (20667)

Business (1000)

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Company (0)

Market (0)

NewsRoom (995)

Research (5)

<input type="checkbox"/>	FUDAN UNIVERSITY	Far East Eastern Asia Asia China	English	Emerging Market Countries	2012-05-15
Title: Research from Fudan University in the Area of General Science Published					
<input type="checkbox"/>	FUDAN UNIVERSITY	Far East China Eastern Asia Asia	English	Emerging Market Countries	2012-05-01
Title: Findings from Fudan University in Nucleic Acids Research Reported					
<input type="checkbox"/>	CYS INVESTMENTS INC	Asia Eastern Asia Far East China	English	Emerging Market Countries	2012-03-23
Title: Studies from Fudan University in the Area of Science Described					
<input type="checkbox"/>	STATE KEY LABORATORY OF RESPIRATORY DISEASE	Asia Eastern Asia China Far East East	English	Emerging Market Countries	2012-03-20
Title: Studies from Fudan University in the Area of Science Described					
<input type="checkbox"/>	SKF INC	Far East China Asia Eastern Asia	English	Emerging Market Countries	2012-02-24
Title: Research from Fudan University in Neuroscience Provides New Insights					
<input type="checkbox"/>	STATE KEY LABORATORY OF RESPIRATORY DISEASE	Asia Eastern Asia China Far East East	English	Forecasts Emerging Market Countries	2012-02-24

Displaying 1 - 50 of 995

Page 1 of 20

Go to Page: Go Display: 50 Records per page

THEMESCAPE TECHNOLOGY MAP

The screenshot shows a 'Document Viewer' window with a sidebar on the left and a main content area. The sidebar lists various topics with their corresponding percentages. The main content area displays a list of patent entries, each with a publication number, application number, title, and date. The first entry is highlighted in blue.

Topics	%	Type	Title	Date
Lithium	95			
Ion Battery,...	90			
Material	85			
Ion	85			
Electrode	76			
Film	52			
Cells, Cell	47			
Cathode	42			
Anode	42			
Electrolyte	33			
Laser	33			
Carbon	28			
Pulse	28			
Deposition...	28			

Publication Number	Application Number	Title	Date
CN100391034C_	CN200610023257A	Publication Number: CN100391034C_ . Application Number: CN200610023257A . Title - DWPI: Lithium battery electrode material Li2S/Co nanometer compound film and its preparation method . Abstract - DWPI:	1/12/06
CN101154745A_	CN200710046176A	Publication Number: CN101154745A_ . Application Number: CN200710046176A . Title - DWPI: Water system rechargeable lithium or sodium ion battery for accumulator car, comprises positive and negative	9/20/07
CN101174690A_	CN200710046916A	Publication Number: CN101174690A_ . Application Number: CN200710046916A . Title - DWPI: Electrode-active lithium nitride-cobalt material for lithium-ion cell, has evenly mixing lithium nitride and	10/11/07
CN101207202A_	CN200710172619A	Publication Number: CN101207202A_ . Application Number: CN200710172619A . Title - DWPI: Nickel fluoride nanometer electrode material for lithium ion battery has nickel fluoride film with predetermined	12/20/07

21 of 93 in contour

CHINESE PATENTS - THE WEB

- Chinese Patent Office – SIPO
 - English search of titles and abstracts for invention patents and utility models; <http://english.sipo.gov.cn/>
- CNPAT
 - English or Chinese search for Chinese patents, patent applications, utility models, and designs; <http://search.cnpat.com.cn/Search/EN/>
- CNIPR
 - Chinese patent searching, monitoring, document translation, document delivery - English version requires subscription; <http://english.cnipr.com/>
- IPEXL
 - US, US applications, China (native), and Singapore; <http://www.ipexl.com/en/>



CHINESE COVERAGE – THE DEEP WEB

- Thomson Innovation:
 - Patent applications translated partial full text (title, abstract and all claims), 2007-present, bibliographic 1985-present
 - Utility models translated partial full text (title, abstract and all claims), 2007-present, bibliographic 1985-present
- DWPI value-added information:
 - Invention patent applications 1985-date; Granted invention patents 1993-date; Utility models 2007-date
- Web of Knowledge:
 - Chinese Science Citation DatabaseSM (1989-present)
 - Provides bibliographic information and citations to articles in 1200 core Chinese science and engineering journals



THANK YOU

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