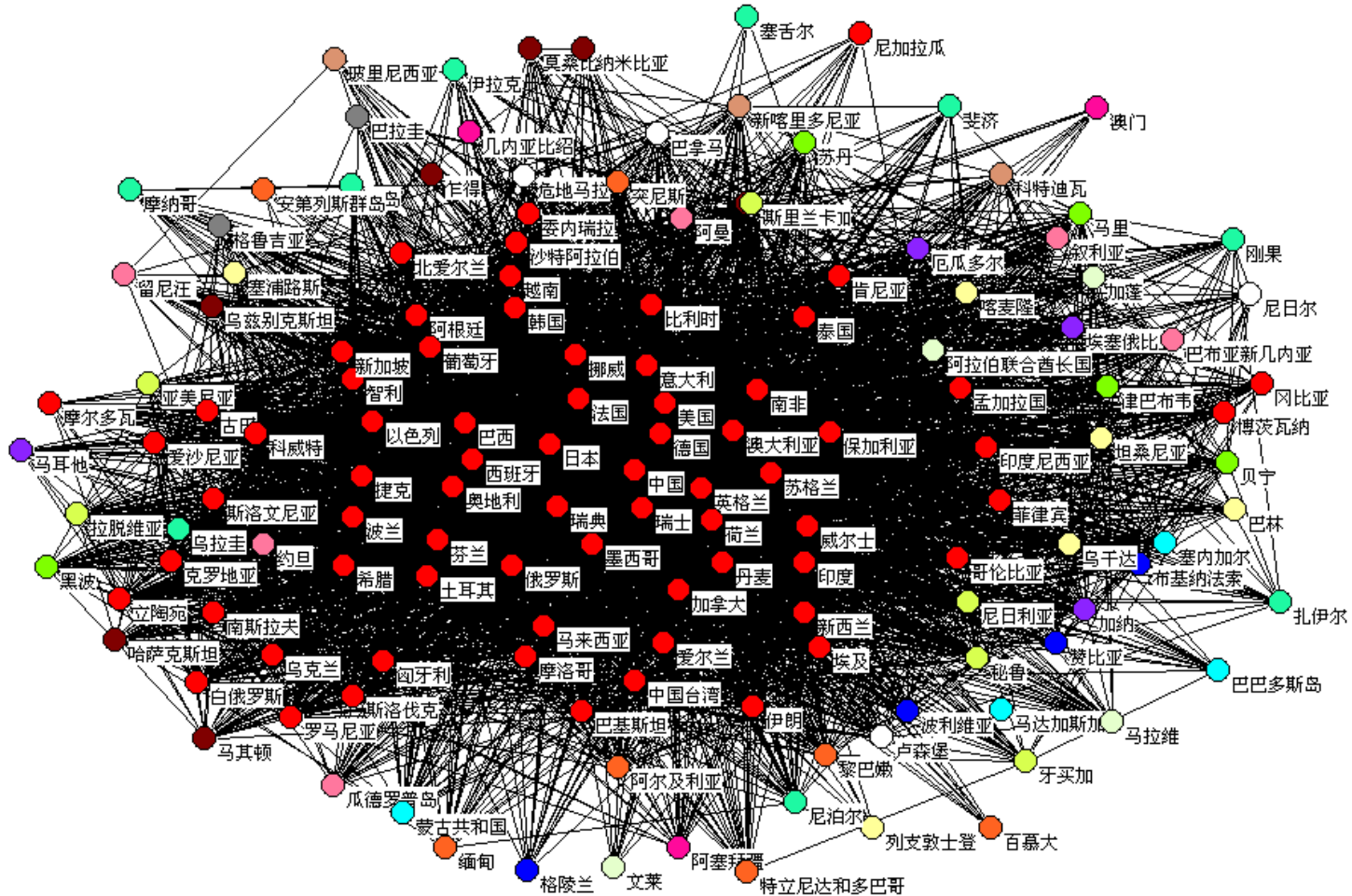


# China: A Rising Scientific (Super-)Power & a Node Embedded in the Global Scientific Network

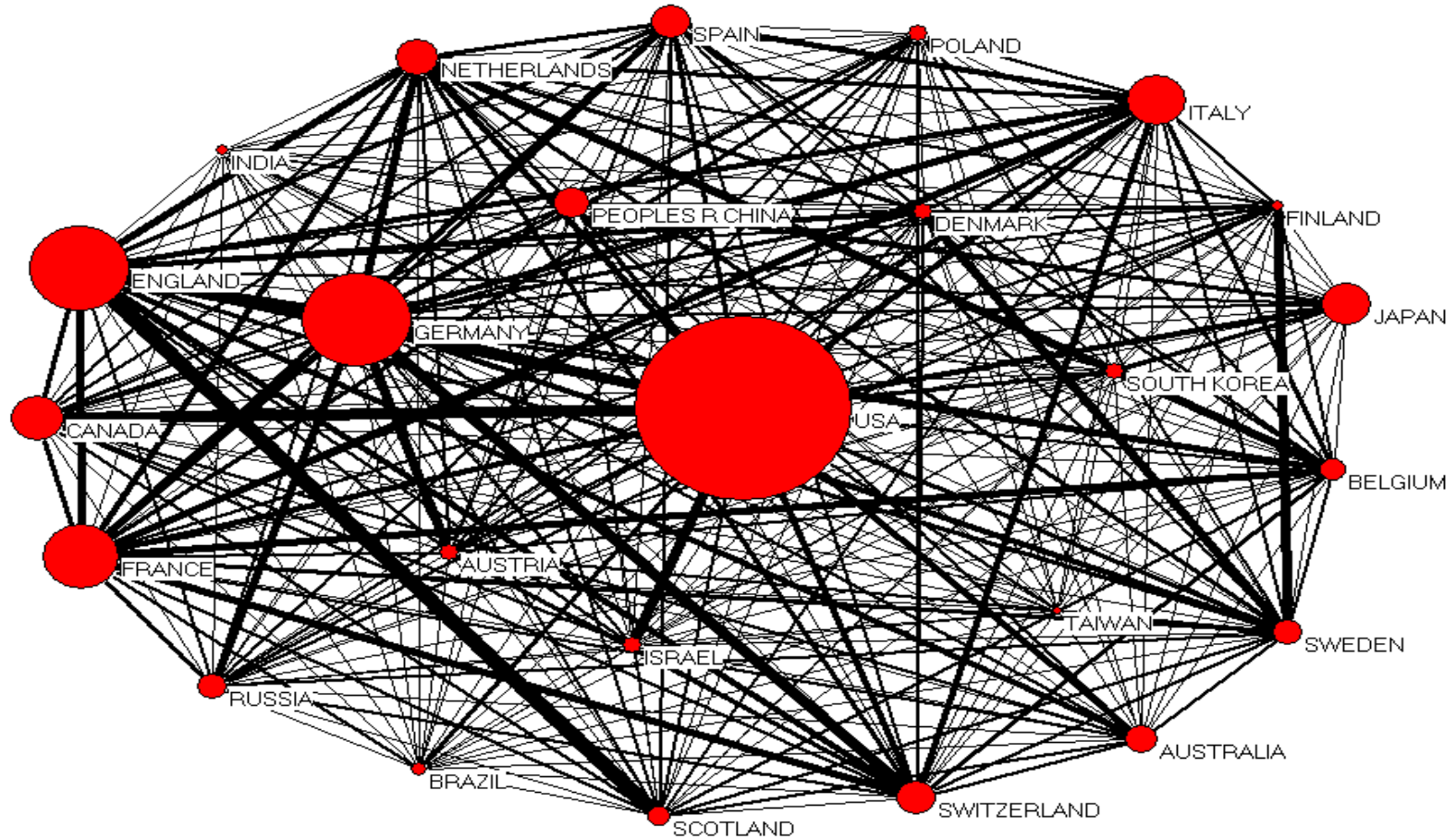
Cong Cao, Ph.D.  
University of Nottingham  
[Cong.cao@nottingham.ac.uk](mailto:Cong.cao@nottingham.ac.uk)

- China as a Rising Scientific (Super-)Power
  - Strong political commitment
  - Increasing investment in R&D
  - A large talent pool
  - Significant expansion of higher education
  - Modern and sophisticated facilities
  - Extensive R&D system: the role of FDI
  - Mobilization of the entire nation (举国体制)

## The Global Scientific Network (145 nations, 2004)

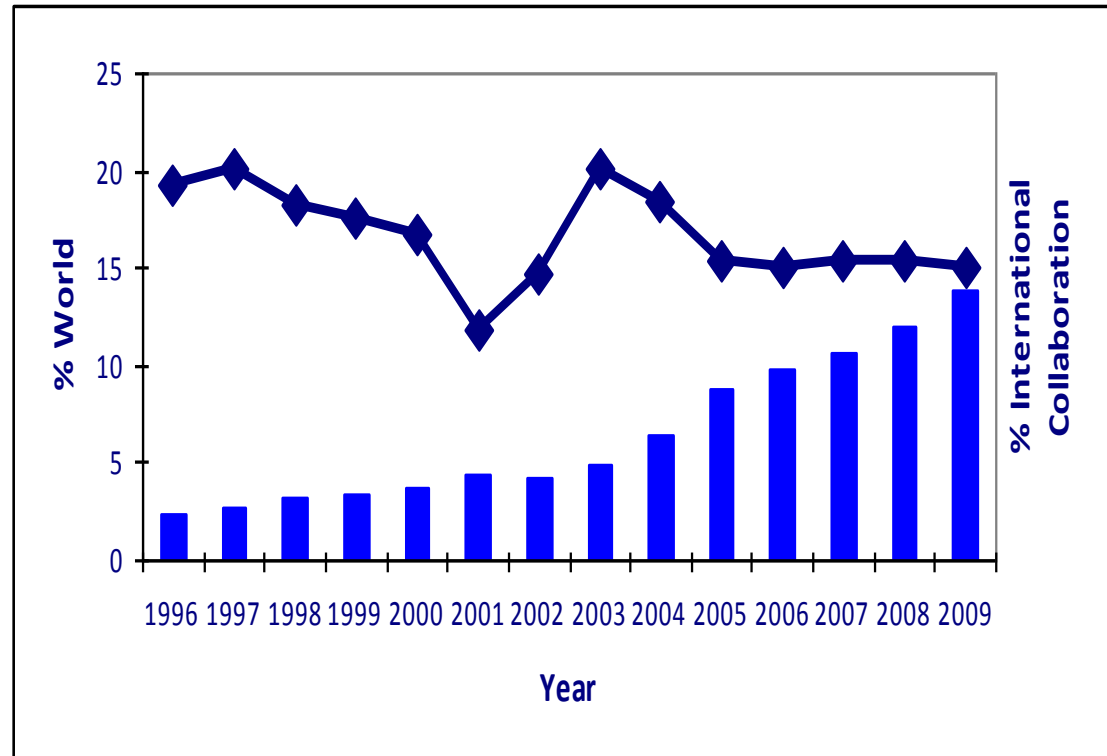


## The Global Scientific Network (25 nations, 2004)



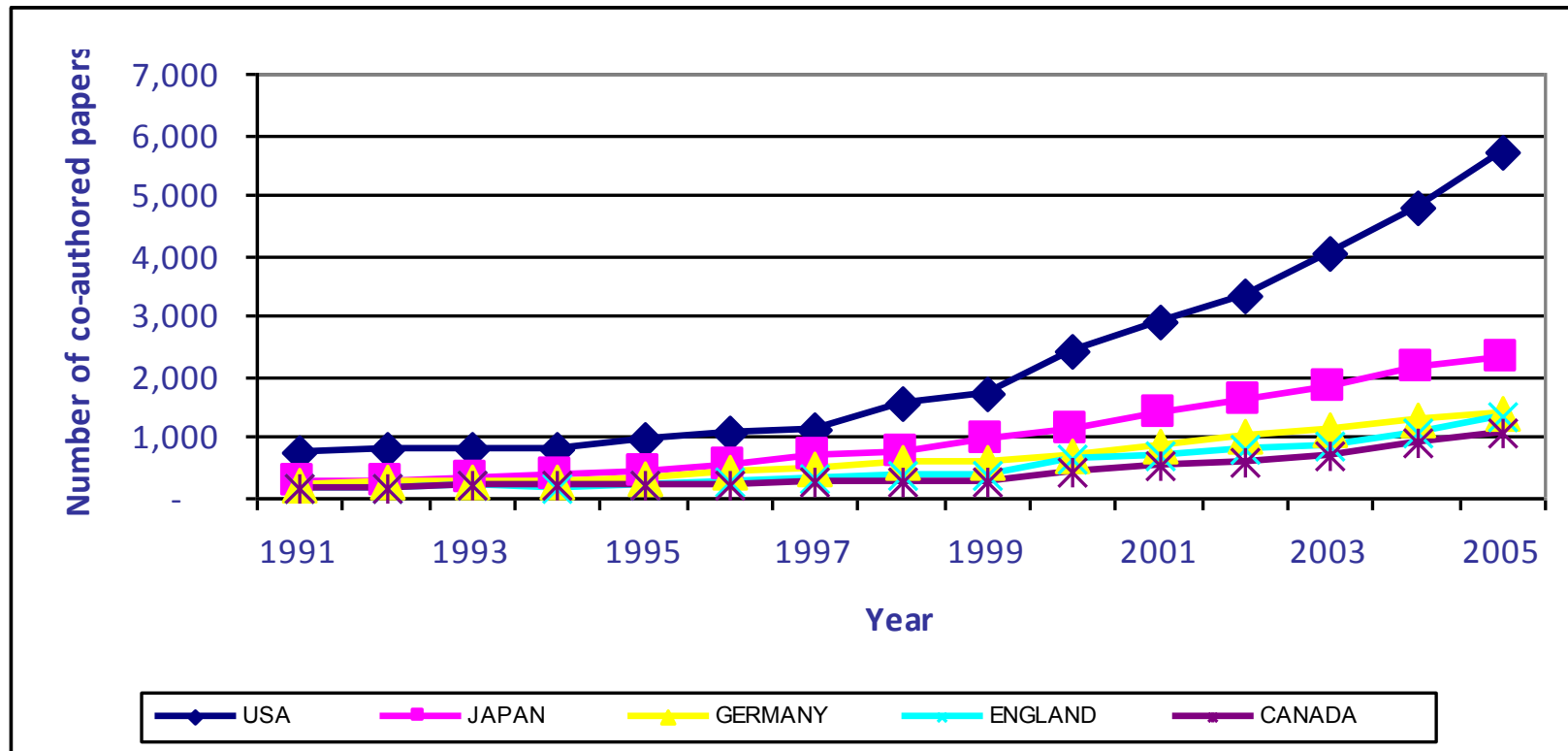
- China as a Node Embedded in the Global Scientific Network (1)
  - Super-node: United States
  - Second-tier nodes: Germany, England, France
  - Third-tier nodes: Italy, Canada, Japan
  - Fourth-tier nodes: The Netherlands, Spain, Switzerland, China
  - Fifth-tier nodes: Australia, Belgium, Russia, Sweden

- China as a Node Embedded in the Global Scientific Network (2)
  - International collaboration has contributed significantly to China's scientific publications



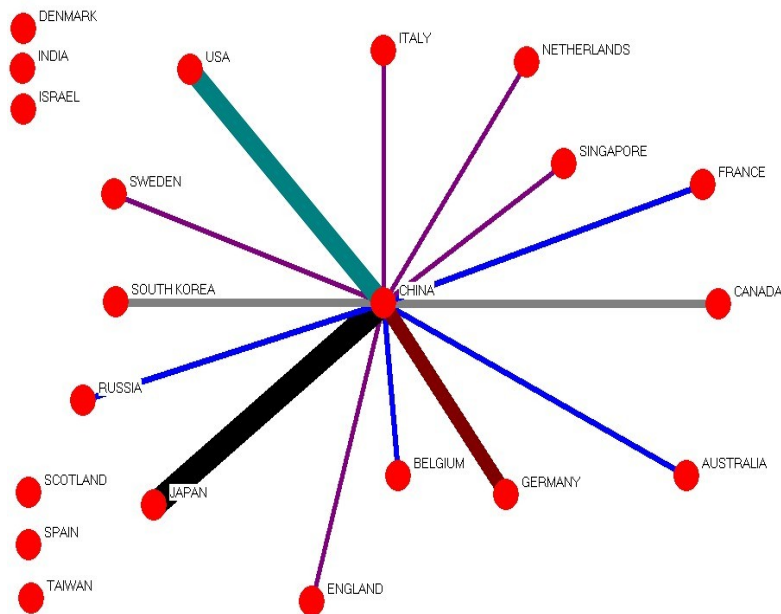
Source: <http://www.scimagojr.com/countrysearch.php?country=CN>

- With Whom Chinese Scientists Have Collaborated (1)

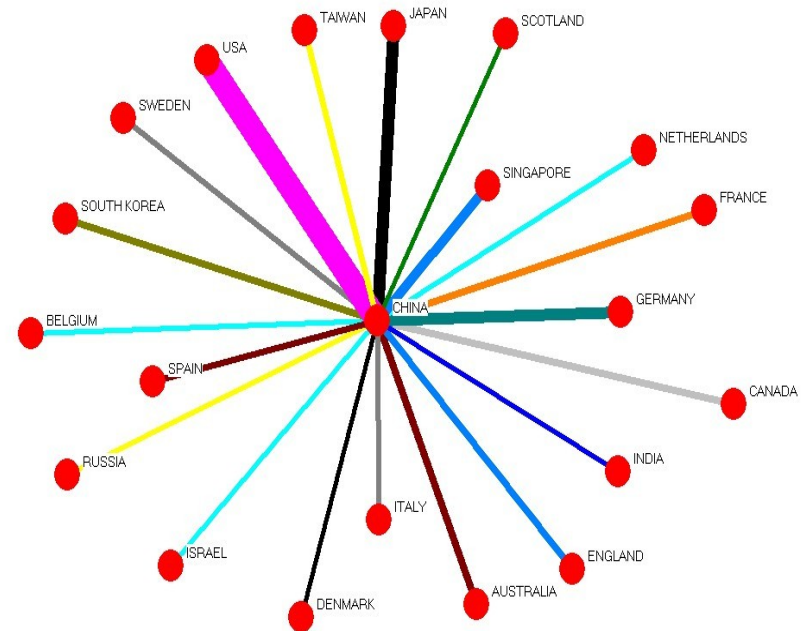


- With Whom Chinese Scientists Have Collaborated (2)

**Nanotechnology 1996  
Japan and USA**



**Nanotechnology 2005  
USA**





- Collaboration with China
  - Public goods with global challenges and significance: climate change, infectious diseases, energy, and food securities
    - Engaging the government (top-down)
  - Basic research
    - Scientists take initiative (bottom-up)
  - High technology
    - Companies in the lead (bottom-up)
  - Toward a post-nationalist science?