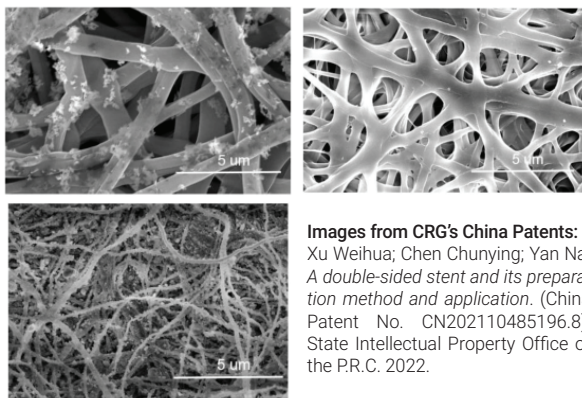


CHINA RESEARCH SPOTLIGHT

A new series from East View that highlights Chinese research and resources on key topics.

Exploring Nanomedicine Research from China

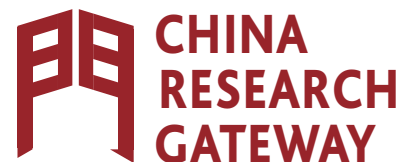


Images from CRG's China Patents:
Xu Weihua; Chen Chunying; Yan Na.
A double-sided stent and its preparation method and application. (China Patent No. CN202110485196.8).
State Intellectual Property Office of the P.R.C. 2022.

The field of nanomedicine seeks to answer such key questions as, “**can DNA nanorobots treat brain tumors?**” or “**can nanorobots transport and move individual cells?**” Much of the key research in nanomedicine is conducted in China, which surpassed the United States in nanotechnology-related patents in 2008. While a greater number of US-granted patents focus on semiconductors and electrical machinery, a greater number of China-granted patents focus on macromolecular chemistry and basic materials chemistry, areas of particular interest to nanomedicine researchers (Wu et al., 2019).

The Gap

East View saw nanomedicine and countless other similar STEM fields and realized that these fields were underserved by North American libraries. Historically, while North American libraries have acquired content from China in the Social Sciences and Humanities, significantly fewer North American libraries have had access to comprehensive STEM content from China. With that in mind, **East View created a transformative program, China Research Gateway, to vastly improve the breadth and depth of Chinese publications in North American libraries while making sure the program is accessible and affordable.** To achieve accessibility and affordability, East View has created an English-language portal and English-language user guides to improve language accessibility and has negotiated an unprecedented package of databases with our Chinese partners.

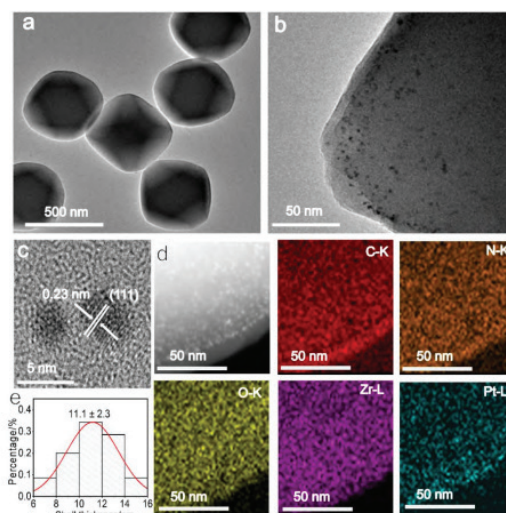


In this and future China Research Spotlight newsletters, we will highlight China Research Gateway (CRG) and its unparalleled offering of Chinese content and East View support for a North American audience.

What can CRG offer a nanomedicine researcher in North America?

With an emerging and highly specialized field like nanomedicine, it is vital that researchers have access to the most up-to-date information from around the globe. Researchers at China's National Center for Nanoscience and Technology have over 4,200 publications in CRG, including over 800 journal articles, over 600 conference proceedings, and over 2,600 patents.

In 2021 Professor Chen Chunying of the National Center for Nanoscience and Technology was awarded the Royal Society of Chemistry's Environment Prize for her research on the nano-bio interface. A search of databases in CRG reveals that Chen Chunying has around 200 publications in CRG's databases, including journal articles, conference proceedings, and patents. Her research tackles the safety, toxicity, and biological effects of nanomaterials. Research in these areas is crucial to North American doctors and scientists. According to the American Medical Association (AMA), one of the major barriers to nanotechnology in medicine is "unknown biological interactions, effects and toxicities." According to the AMA Journal of Ethics, medical experts are critical of how the US Food and Drug Administration evaluates nanotechnology products, including evaluations of their "toxicity and [the] human health impacts of exposure." **A topic like nanomedicine requires that specialists have access to the full spectrum of research being conducted around the world.**



Images from CRG's China Academic Journals: Chen Junmin, Cui Chengqian, Liu Hanlin, Li Guodong. "Study on the Selective Hydrogenation of Quinoline Catalyzed by Composites of Metal-Organic Framework and Pt Nanoparticles." *Acta Chimica Sinica*. 2022.

A Call to Research

In 1996 Rice University Professor Robert F. Curl Jr., who passed away in early July 2022, jointly won the Nobel Prize in Chemistry for his (and his fellow researchers') synthesis of fullerenes, which joined graphite, diamond, and amorphous carbon as the known allotropes of carbon. The discovery of fullerenes has fueled nanomedicine research ever since. In 2016, nanotechnology researchers won the Nobel Prize in Chemistry once again, this time "for the design and synthesis of molecular machines." The next Nobel Prize may be around the corner and CRG may be the program researchers need to achieve it.

See the below links for further reading on nanomedicine research from China.

- **Comparing nanotechnology landscapes in the US and China: a patent analysis perspective – Journal of Nanoparticle Research** <https://par.nsf.gov/servlets/purl/10158271>
- **Regulating Nanomedicine at the Food and Drug Administration – AMA Journal of Ethics** <https://journalofethics.ama-assn.org/article/regulating-nanomedicine-food-and-drug-administration/2019-04>
- **Nanoethics: It's time for big thinking about nanomedicine - American Medical Association** <https://www.ama-assn.org/delivering-care/ethics/nanoethics-it-s-time-big-thinking-about-nanomedicine>
- **Professor Chunying Chen FRSC: Winner: 2021 Environment Prize – Royal Society of Chemistry** <https://www.rsc.org/prizes-funding/prizes/2021-winners/professor-chunying-chen/>
- **The Nobel Prize in Chemistry 1996** <https://www.nobelprize.org/prizes/chemistry/1996/summary/>
- **The Nobel Prize in Chemistry 2016** <https://www.nobelprize.org/prizes/chemistry/2016/summary/>



China Research Gateway (CRG) presents the full spectrum of Chinese research, with exhaustive representation of STEM, social science, and humanities disciplines. Featuring an unparalleled breadth of sources, including scholarly journals, monographs, statistical publications, government documents, newspapers, dissertations, conference proceedings, patents, and many other content types, CRG offers a centralized means for discovery and access to this rich trove of research, specifically tailored to serve the needs of North American scholars and institutions.