

Siemens Research and Development in China

Siemens research and development (R&D) in China

- In fiscal 2014, Siemens employed some 28,000 people worldwide in research and development, of whom 13,200 were in Germany and 15,600 were outside Germany. Siemens Corporate Technology (CT), the company's central research department, operated 21 research centers worldwide, with 7,800 researchers, developers and other experts.
- Every workday, Siemens researchers file about 40 invention disclosures. Investments in research and development (R&D) are also being further expanded: this fiscal year, Siemens will spend over €4.4 billion on R&D - about €400 million more than in 2014.
- Siemens China Corporate Technology was established in 1998. Significant expansion began in 2004.
- Today, Siemens China operates 20 R&D centers nationwide as well as a major central research unit with locations in Beijing, Shanghai and Nanjing, which employ more than 400 top-notch innovators.
- The company participates in joint research projects with 85 universities and research institutions.
- In the past five years, the number of R&D employees has grown from some 1900 to about 2,500.
- In the previous decade (fiscal 2005 through fiscal 2014), Siemens' R&D expenditures in China is more than doubled, increasing by 155 percent. The number of R&D employees grew by 71 percent. The number of granted patents is 5.3 times increase and patent first application is 9.5 times increment.
- In fiscal 2014 (October 1, 2013 to September 30, 2014), Siemens held over 4,900 granted patents in China. The number shows an increase of 500 compared to the previous fiscal year. The number of patent first applications was roughly 400.
- In 2013, Siemens established innovation centers in Wuhan and Wuxi. These centers support local innovative industries with need-driven innovation projects and, working hand-in-hand with local governments and partners, help small and medium-sized businesses develop pilot projects.

- Siemens opened an industrial security lab in Beijing in March 2014. This lab, which is the first facility of its kind to be established by a company in China, assists customers in improving the information security level of their industrial control systems.
- The company launched its SMART (Simple, Maintenance-friendly, Affordable, Reliable, Time-to-market) program roughly six years ago. SMART products are developed locally. Knowhow gained in the Chinese market is now flowing into solutions for other markets – for emerging countries like India and Brazil, for example. For instance, computed tomography systems from China are also being marketed in these countries today.

R&D highlights

- Wuhan traffic management system

For Chinese mega cities like Wuhan, the chaotic traffic situation is not a good basis for automatic traffic management. Based on Siemens' Intelligent Traffic System put into use in 2009, Siemens Corporate Technology China, together with municipal authorities came up with a simple and yet revolutionary solution: incorporating the police force into the system by equipping the traffic policemen who work at troublesome intersections with a smart phone APP. The APP serves as an information terminal that calculates traffic density on the basis of data from the Traffic Control System. In addition, during rush hours the APP enables users to remotely operate the traffic lights manually without the necessity to stand on the roadside behind the controller box in order to direct traffic.

- Trainguard MT

With a huge population, there seems to be never enough capacity of metro for all the passengers - especially during rush-hours in China. To address this challenge, Siemens further developed the CBTC (communication-based train control)-based metro control system Trainguard MT, which can shorten the headway to 90 seconds. Trainguard MT can reduce CO2 emissions by up to 10,000 tons annually on a typical metro line thanks to energy-optimized travel. The system has so far been applied in mega cities such as Beijing, Guangzhou, Xi'an, Chongqing, Nanjing and Suzhou. This innovative solution - developed based on the unique needs of the Chinese customers originally for the 2008 Beijing Olympics - is today installed in metro-systems world-wide.

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