

PROMOTING LOCAL ECONOMIC DEVELOPMENT BY AN INTEGRATION OF INDUSTRY, TEACHING AND RESEARCH OF COMPACT LOW ENERGY ACCELERATORS

M W Fan¹, J Huang¹, J Yang¹, K F Liu¹, T Q Yu¹, Y Q Xiong¹, D Li¹, B Qin¹, D Z Chen¹, H Q Gao²

¹ Huangzhong University of Science and Technology

² Hubei University of Science and Technology

Challenges of the Application of Compact Low Energy Accelerator in China

The electron beam processing industry based on compact low energy accelerators bears the merits of energy-saving, environmental friendliness, high-efficiency, etc., but it also has the limitations caused by expensive equipment, demanding operator with skill, high cost of maintenance, low conversion efficiency (from electric energy to irradiation energy), etc.

Challenges of the Application of Compact Low Energy Accelerator in China

The role of electron radiation processing in a product line can be defined as a process. It might have more operations should be done before or after that process in the product line.

Challenges of the Application of Compact Low Energy Accelerator in China

Recent years the electron beam processing industry seems growing faster in China, but still lacks the impetus in innovative and core technology as well as irradiation product criteria.

In past few years, the Nuclear Technology Research Group of HUST, has been focusing on the research and application of compact low energy accelerator under the support of the government and university to explore an innovative mechanism to boost the local economic development.

"Suggestions of developing non-power nuclear energy industry in Hubei Province" to the provincial government, and carried out a project on a strategic research on non-power nuclear energy industry development in Hubei Province with the support of the Department of Science and Technology of Hubei Province. In 2009, an advisory research report on "Roles of non-power nuclear energy technology in the promotion of national economy development and construction of resource-saving and environmental-friendly society" was completed and submitted to Chinese Academy of Engineering.



Forum on Roles of non-power nuclear energy technology in the promotion of national economy development and construction of resource-saving and environmental-friendly society.



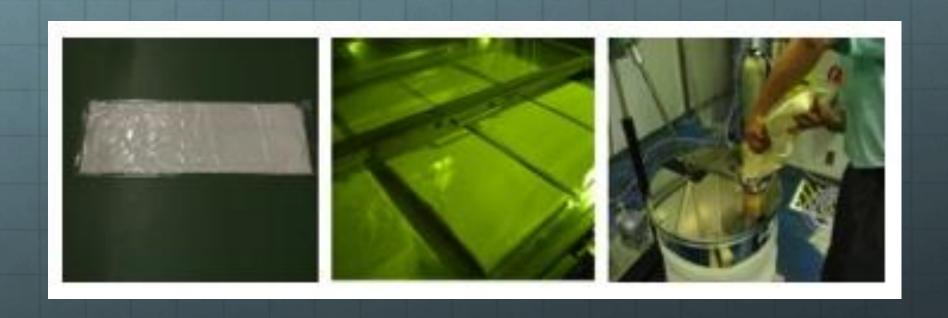
R&D Building of Accelerator Technology, Huazhong University of Science and Technology.



R&D center of non-power nuclear energy technology, Hubei University of Science and Technology.



R & D of hydrogel product used for medical purposes



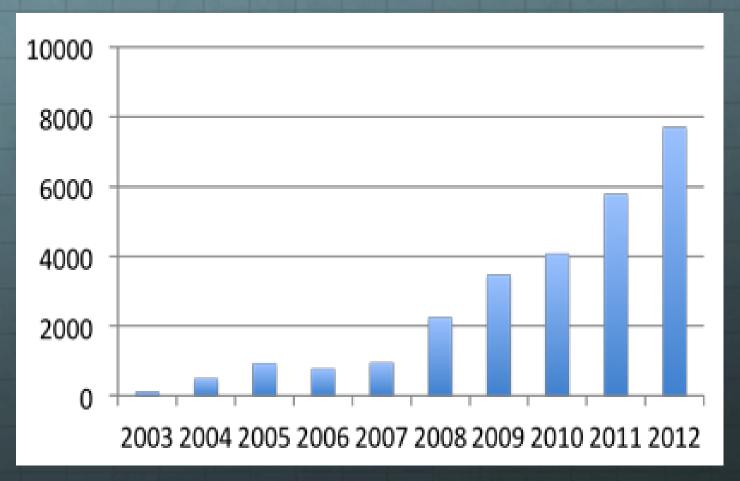
R & D of Adsorption material



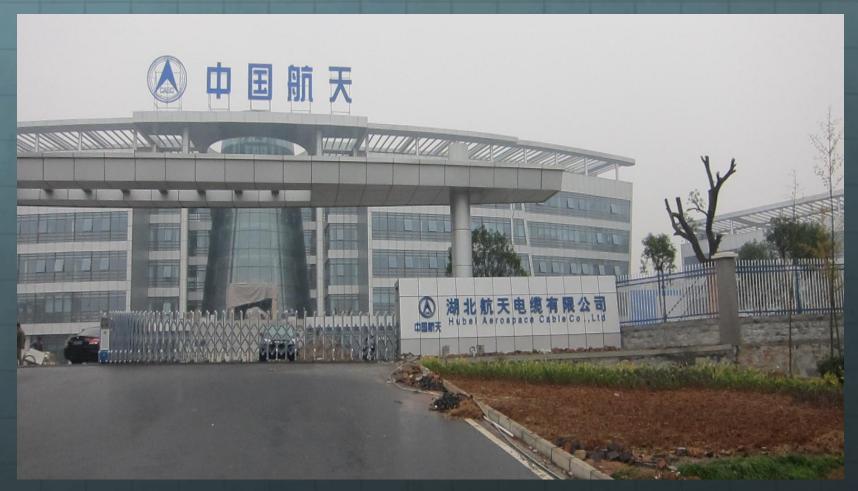
The PET research and application center building of Union Hospital.



The PET camera in the center

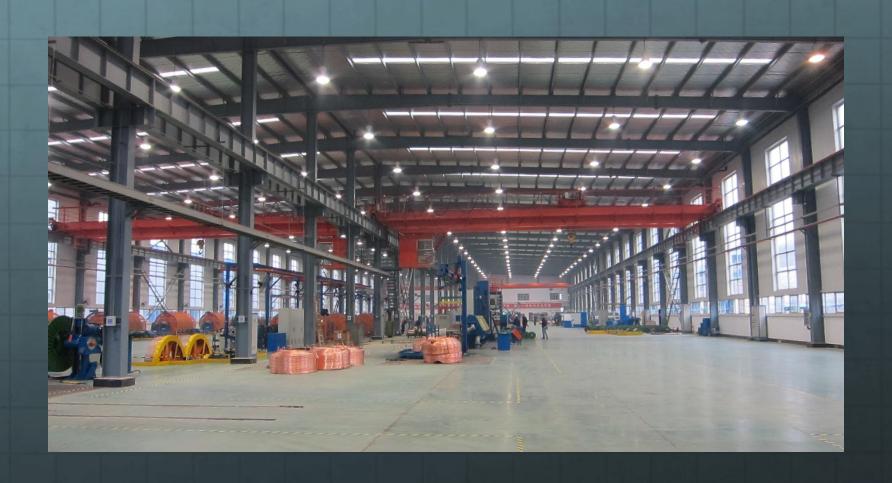


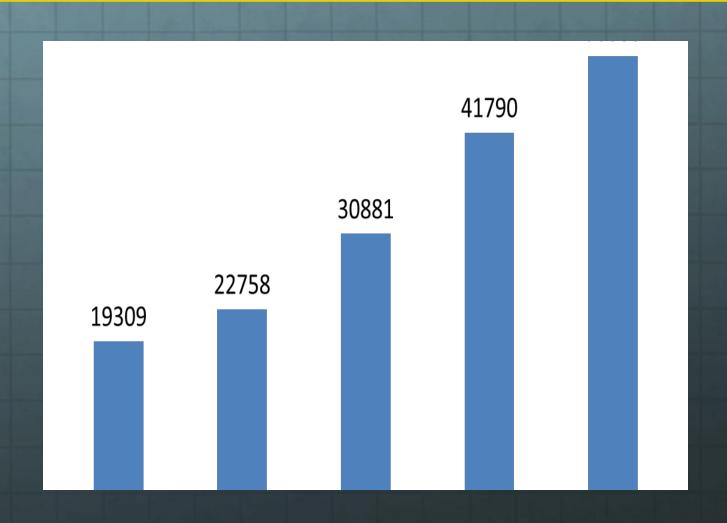
The cases diagnosed by the PET center of Union Hospital in recent years.



Hubei Aerospace Cable Company.







Conclusion

As we entered into 21 century, terrorism and environmental deterioration are becoming the common enemies around the world. We are seeking a new collaborative mechanism, that is to integrate the roles of government, industry, university and research institute to facilitate the non-power nuclear energy industry, on the basis of low energy accelerator application, to contribute effectively to the environment protection and a low carbon economy.

Conclusion

Confronting with such a challenge and opportunity, it is an inexorable trend to effectively allocate resources by means of integrating industry, teaching and research in different fields to sharp a brand new cooperative mode for the future development of non-power nuclear energy industry.

