



IAEA FEC 201

Contribution ID: 725

Type: **Poster**

Design and R&D Activities of Fusion Breeder Blankets in China

Thursday, 20 October 2016 08:30 (4 hours)

China has long been active in pushing forward the fusion energy development to the demonstration of electricity generation. Two experts' meetings were organized in 2014 by Ministry of Science and Technology (MOST) to seriously discuss the China's fusion roadmap in particular the design and construction of magnetic confinement fusion reactor beyond ITER.

As one of the most challenging components in the fusion reactor, great efforts have been put on the development of breeder blanket which is the central part of fusion nuclear science and technology (FNST). Three blanket concepts have been mainly developed in China for China Fusion Engineering Test Reactor and DEMO, including Dual Functional Lead Lithium (DFLL), Helium Cooled Ceramic Breeder (HCCB), and Water Cooled Ceramic Breeder (WCCB). Moreover, there are also some other options in the early stage of concept design.

In this paper, the blanket concept studies in China will be summarized, and the corresponding research and development activities will also be presented. The latest progress and technical challenges were emphasized in the fusion nuclear material development, the breeder and coolant technology and relevant test platforms, the Tritium technology achievement, and fusion nuclear safeguard, which will form the very basis of FNST for fusion blanket.

Finally, the possible blanket development roadmap to DEMO in China will also be included as well as the international collaboration strategy.

Keywords: Fusion Blanket, TBM, Development Roadmap

Paper Number

FNS/P5-12

Country or International Organization

China

Primary author: Prof. YU, JIE (Institute of Nuclear Energy Safety Tech. , CAS)

Presenter: Prof. YU, JIE (Institute of Nuclear Energy Safety Tech. , CAS)

Session Classification: Poster 5

Track Classification: FNS - Fusion Nuclear Physics and Technology