

Initiative on Advanced Plasma Facing Material Research Network in ASEAN

Plasma-facing materials (PFM) play crucial role in fusion reactors. It has been estimated that fusion energy, once commercially available, would contribute as much as 5% of the total electricity production in ASEAN. If one-tenth of such a fusion cost were from fusion materials, advanced fusion materials could constitute about 7.6×10^8 USD with a possible four percent annual growth rate. Extreme environment such as high heat and unusual large neutron flux with low outgassing and at yet low pressure in the fusion reactors requires multi-superior materials properties. To develop novel materials to meet such extreme condition is a challenging task and to test such materials in a single station is even so formidable task. A small collaborative network on comprehensive developing advanced materials, testing with tokamak plasma, exposing to linear-plasma devices and analyzing the plasma exposure effect is taking shape in ASEAN. TINT is acting as a host for the CPaF consortium and a few ASEAN neighboring institutes to pool the like-mind experts and resources. This initiative is expected to include an exchange program for researchers and to also organize fusion plasma school program for students and engineers from Southeast Asia abound, as well as from Japan, China, and India, to participate.

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