Synthesis and Fabrication of Solid Breeder materials

A process, named as 'Solid State Reaction Process' (SSRP) has been developed to synthesize, fabricate and sintered solid breeder materials viz. lithium titanate (also called lithium meta-titanate, Li_2TiO_3) and lithium ortho-silicate (Li_4SiO_4). The pebbles are suitable for fusion reactor and meet all the desired specifications. SSRP is a semi-automated process with a production capacity of 12 kg 1.0 mm size pebbles per hour and the process can be easily scaled up.

Fig. 1 (a) Rotary reactor
(b) automated granulation system for the synthesis and fabrication of pebbles of solid breeder materials *viz.* Li_2TiO_3 and Li_4SiO_4

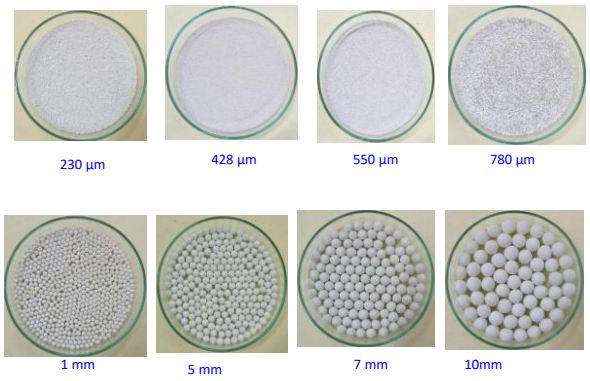

Fig. 2. Different size Pebbles of Li_2TiO_3