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Design and Fabrication of a Beam Dump at KBSI Heavy Ion Facility

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We have developed a beam dump that can withstand beam energy below 20 MeV. The beam dump consists of copper, graphite and is designed to prevent primary heavy ion beam and secondary radiation particles such as neutrons, electrons, x-rays, etc., from beam generated when the beam collides with the beam dump blocks. Now a beam dump is attached to the end of diagnostic chamber of accelerators. Next it will be located at the end of RFQ (Radio Quadrupole Frequency) System that was completed the fabrication of a RFQ section. The PHITS code and ANSYS steady-state thermal analysis was adapted for simulating the heat transfer, amount of production of secondary particle production after bombarding the beam dump material.

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