Characteristics in Water Phantom of Epithermal Neutron Beam Produced by Double Layer Beam Shaping Assembly

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Abstract	A Double Layer Beam Shaping Assembly (DLBSA) was designed to produce epithermal neutrons for BNCT purposes. The Monte Carlo N-Particle eXtended program was used as the software to design the DLBSA and phantom. Distribution of epithermal neutron and gamma flux in the DLBSA and phantom and absorbed dose in the phantom were computed using the Particle and Heavy Ion Transport code System program. Testing results of epithermal neutron beam irradiation of the water phantom showed that epithermal neutrons were thermalized and penetrated the phantom up to a depth of 12 cm. The maximum value of the absorbed dose was 2 ÃƒÂ— 10-3 Gy at a depth of 2 cm in the phantom.
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