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Neutron Detector with Ceramic GEM

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The GEM detector is useful for various fields, not only high energy physics. One uncomfortable feature is to be broken due to a large discharge. One large charge deposit makes a trigger to lead the large discharge and to carbonize inside the GEM hole. We are developing new GEM foil without carbon to avoid such a bad situation. One good solution is to apply ceramic as an insulator. New ceramic GEM was manufactured with 100 mm × 100 mm size and 100 μ m thickness. Also, a neutron detector was constructed with a boron coated cathode to detect neutron for the beam monitor in Born Neutron Capture Therapy (BNCT). The chamber worked fine in the beam test. The results will be shown in the workshop. Now, we are trying to make boron coated GEM to get higher efficiency for the thermal neutron. One new result will be shown, also.

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