

A new neutrinoless double beta decay experiment: R2D2

The search for neutrinoless double beta decay could cast light on one critical piece missing in our knowledge i.e. the nature of the neutrino mass. Its observation is indeed the most sensitive experimental way to prove that neutrino is a Majorana particle. The observation of such a potentially rare process demands a detector with an excellent energy resolution, an extremely low radioactivity and a large mass of emitter isotope. Nowadays many techniques are pursued but none of them meets all the requirements at the same time. The goal of R2D2 is to prove that a spherical high pressure TPC could meet all the requirements and provide an ideal detector for the $0\nu\beta\beta$ decay search. In the proposed talk the R2D2 goal and roadmap will be discussed as well as the ongoing R&D and the future developments.

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