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A new high-efficiency radon registration method

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Radon is a naturally occurring noble radioactive gas formed by the decay of radioactive chains of thorium and uranium. Radon and its daughter decay products are being increasingly studied, and their background contribution to low-background experiments for neutrino studies, dark-matter particle searches and other experiments requiring low-background conditions is also being investigated.

A new method of radon registration developed at the JINR DLNP will make it possible to correct a number of drawbacks of existing methods. Based on the proposed method, a compact radon detector with an expected sensitivity level of ~ 1 mBq/m^3 of radon in air has been created, which will allow efficient evaluation of the concentration of radon and its daughter products.

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