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## A Highly Sensitive Radon Emanation Measurement System at SNOLAB

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Rare event search experiments, such as those searching for neutrino interactions, neutrinoless double-beta decay, and dark matter, often have significant backgrounds from radon ( $\text{Rn-222}$ ) and its progeny. These experiments must be constructed from low-background materials to minimize these backgrounds as much as possible. Radon may be emitted from the material surface and can propagate throughout the detector. Therefore, measuring radon emanation is an objective of many low background experiments. A highly sensitive radon emanation counting system, which includes a low-radioactivity acrylic emanation chamber, a radon transferring apparatus, and a low-background  $\text{ZnS(Ag)}$  scintillation cell, has been developed at SNOLAB and is used to study radon emanation of different materials. This presentation will describe the mechanism required for the effective transfer of radon from the emanation chamber into the scintillation cell, its sensitivity, and efficiency obtained for this system.

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