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Production of electron sources at iThemba LABS

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An electron spectrometer for the measurement of internal conversion electrons is undergoing development at iThemba LABS. The spectrometer will be used to study the nuclear configuration of multiple excited 0+ states around Z ≈50 region. The purpose of the project is to wider the state of knowledge for electron conversion sources of nuclei with proton number near fifty (Z≈50). In order to accomplish this, a set of different electron sources around this region will be produced (¹²⁰Sn, ¹⁰⁹Cd & ¹⁷⁰Yb) ¹⁷⁰Yb will be used to calibrate the spectrometer, since this nucleus has lot of discrete states. A proton beam ranging from 11 to 66 MeV will be used to produce sources using(p,n) reaction. The cross sections and activity yield for sources have been calculated, ¹³³Ba and ²⁰⁷Bi will be used to calibrate the spectrometer, and hence their efficiency have been measured. This presentation will describe current progress on this project.

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