Low energy negative muons are interesting and useful for nuclear energy applications such as muon catalyzed fusion, nuclear transmutation for nuclear wastes treatment and radioisotope production. One of the most important technical issues for making them in reality is to develop an efficient way of generating intense low energy negative muons. In this seminar, a new scheme of low energy muon source called MuERIT (Muon source with Energy/emittance Recovery Internal Target) with ionization beam cooling is presented.