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Cathodes with optimized quantum efficiency for driving a spin polarized positron source

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Polarized positron beams generated from MeV-class accelerators may become useful for applied physics. We first discuss how existing facilities –e.g. the low emittance positron beamline at the MAMI accelerator in Mainz - can be extended towards spin-polarized operation. In the end, however, it is the intensity of the driving polarized electron source which is one of the most important limiting factors for the positron intensity that could be expected. We discuss important factors that need to be optimized from the cathode point of view, such as quantum efficiency and heat transfer.

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