

**High Capture Efficiency for the Polarized Beam
at MAMI by r.f.-Synchronized Photoemission,**

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Institut Fuer Physik, Universitaet Mainz - The current from
a GaAs-type source of polarized electrons is limited because
some deterioration processes-like the production of ions from
the residual gas - are proportional to the current itself.
Therefore a high longitudinal capture efficiency of the
injection into the accelerator is desirable in order to use the
produced charge efficiently. This may be achieved by the
synchro-laser method: Picosecond light pulses are
synchronized to the accelerator r.f. and generate a 2.5 GHz
c.w. electron pulse train. Reliable operation has been
achieved with a bunch length of 60-100 ps that resulted in a
transmission from the source to the target of 75%.

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