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(54) **PARTICLE-OPTICAL APPARATUS AND METHOD FOR OPERATING THE SAME**

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(57) **ABSTRACT**

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A particle-optical apparatus is proposed as well as a method for operating the same. The particle-optical apparatus provides a magnetic field for deflecting charged particles of a beam of charged particles and comprises a body of a material with a permeability number around which a current conductor at least partially engages and a temperature-adjusting unit -for adjusting a temperature of the magnetic-flux-carrying body substantially to a nominal temperature. A relative variation of the permeability number relative to a width of a temperature range is to be smaller than a limit value a, wherein a is preferably smaller than  $3 \cdot 10^{-3} \text{K}^{-1}$ . In particular, the nominal temperature is at an extremum of a temperature dependence of the permeability number. Preferably, such a particle-optical apparatus can be employed in a microscopy or a lithography apparatus.

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