

# Rekonstruktion der Leitfähigkeitsverteilung mit einem Impedanztomographen

Reconstruction of Conductivity Distributions by Means of an Impedance Tomograph

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We have built an electrical impedance tomograph which makes it possible to reconstruct impedance distributions in the interior of a cylinder by means of measurements of currents and potentials on its boundary. The reconstruction algorithm is based on Newton's algorithm for the solution of non-linear integral equations, where the electric fields are calculated by the methods of finite elements and finite integrals. The results can be represented graphically on a PC. The resolution is fine enough to envisage applications in medical diagnostics.

*Key words:* Tomography; Electrical Impedance Tomography; EIT; Impedance Imaging.