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Activation of Mg after Ion Implantation in SI-InP by means of EB-RTA

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EB-RTA (Electron Beam-Rapid Thermal Annealing) allows short-time temperature treatments with precise process control. An argument speaking against an application to InP is the high vapour pressure of the phosphorus. At temperatures > 500 °C and without covering of the sample, this leads to a destruction of the sample surface. If the sample is placed in a special mount of graphite during the tempering process, high annealing temperatures are reached without destruction of the crystal lattice. Electric activation of the implanted Mg ions takes places in a tempering process of only a few seconds. Subsequently the properties of the annealed material were examined by means of DLTS, Channeling-RBS and various electrical measuring methods.