

Role of Industry and Accelerator Laboratories in Future Particle Beam Facilities for Cancer Therapy,

D. BÖHNE, Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany - Deep-seated tumours, especially those located close to sensitive organs, can hardly be eliminated by surgery or γ -ray treatment. In those incidents particle beams, available at nuclear physics accelerators, have successfully been in use since 3 decades. Particle beams offer the advantage of a well confined lateral definition and a well defined energy deposition in depth. Socio-oeconomical studies revealed that 8 proton facilities and 2 heavy ion facilities would be needed for Europe. Whilst for the clinical research phase it was acceptable that patient treatment is performed in physics laboratories, such an irradiation facility is presently under construction at GSI, it was always a strong plead from the therapists to have such a facility exclusively to their disposal in a clinical environment. As the role of the clinic in acquiring and operating such a facility is traditionally clear, a solution has to be sought for the design, procurement, installation and commissioning of the technical components. Since a heavy ion synchrotron is not a catalogue item, a collaboration of an accelerator laboratory and an industrial consortium is conceivable GSI established such a proposal in case of a heavy ion irradiation facility would be built at the Radiological Clinic at Heidelberg.