TECHNOLOGICAL LABORATORY OF THE LMU - STATUS

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Technological Laboratory develops and produces thin foils and targets for the needs of both laser and nuclear physics. Last years, main activity has been concerned with ultra-thin (nm range) free standing Diamond-Like-Carbon (DLC) foils for laser physics applications. The DLC-foils are produced by cathodic arc deposition technique in a dust-reduced environment. Basic application of such foils is laser driven charged particle acceleration. It allows to accelerate electrons, protons and ¹²C ions to high energies, achievable so far only in big conventional accelerators. Such laser accelerator will be much smaller and cheaper, than the conventional one. Main application of such device would be very precise cancer radiation therapy. The DLC assembly was undergoing certain modifications recently, aiming at improvement of foil thickness determination and homogeneity. The Technological Laboratory preserves its possibilities of standard thin film deposition by high vacuum evaporation, including the production of stable isotope targets.