

Invention concerns the ion-plasma treatment of materials and, in particular, high-quality sources of filtered plasma of the vacuum arc, which are used for such treatment, and it can be used in microelectronics, optics, precision mechanics, medicine etc. The source of filtered plasma of cathodic arc has reduced losses of plasma and increased ratio of output plasma flow to input plasma flow. The filtration of plasma is achieved in the filter with bent at right angle plasma-guide equipped, at least, with three additional magnetic coils located in the area of bending of plasma-guide. These magnetic coils and other elements of filter, which contain a system of transversal ribs and a magnetic trap of acute-angled geometry in plasma-guiding channel, provide for required transmission efficiency of plasma through the filter, reduction of losses of plasma and reduced output of undesirable particles from the plasma filter. Are also disclosed the embodiments of source with several cathodes, several outlets, and is also examined the influence of the values of Larmor radii of electrons and ions, equipotential magnetic lines and electron/ionic interactions upon the work of source. The process of deposition of film coatings is examined as an example of source application.