

Title (en)

DEVICE FOR IGNITING AND GENERATING AN EXPANDING DIFFUSE MICROWAVE PLASMA AND DEVICE FOR PLASMA TREATING SURFACES AND SUBSTANCES BY USING THIS PLASMA

Title (de)

VORRICHTUNG ZUM ZÜNDEN UND ERZEUGEN EINES SICH AUSDEHNENDEN, DIFFUSEN MIKROWELLENPLASMAS VORRICHTUNG ZUR PLASMABEHANDLUNG VON OBERFLÄCHEN UND STOFFEN MITTELS DIESES PLASMAS

Title (fr)

DISPOSITIF POUR AMORCER ET PRODUIRE UN PLASMA A MICRO-ONDES DIFFUS QUI S'ETEND, ET DISPOSITIF POUR TRAITER DES SURFACES ET DES MATIERES AU MOYEN DE CE PLASMA

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Abstract (en)

[origin: WO2007028813A2] The invention relates to a method for igniting and generating an expanding diffuse microwave plasma and to a device for carrying out such a method. The method is particularly suited for generating microwave plasmas for the purpose of carrying out plasma treatment of surfaces and substances, particularly three-dimensional objects as well as particles under atmospheric pressure. The aim of the invention is to provide a method for igniting and generating these plasmas that is, particularly under normal and high pressure, easy and operationally safe as well as, in principle, carried out without a flow of gas. The invention also relates to a method and device for carrying out plasma treatment of surfaces and substances by means of such a plasma, which makes an effective plasma treatment possible due to its high stability with regard to plasma generation and maintenance, low gas consumption and a high plasma volume. To this end, a plasma ignition ensues inside a wave-bound hollow structure by means of microwave launching over a resonant igniting structure, a simultaneous impelling of the plasma through the resonant igniting structure, however, is not possible. The ignited plasma is supplied with energy via a surrounding microwave field so that an expanding diffuse plasma forms. A particular embodiment in a coaxial arrangement makes it possible to generate a plasma exiting the device for the purpose of carrying out mobile plasma treatment.

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