

Title (en)

METHOD FOR PLASMA GENERATION IN LIQUIDS USING A JET SYSTEM

Title (de)

VERFAHREN ZUR PLASMAERZEUGUNG IN FLÜSSIGKEITEN MIT EINEM JET-SYSTEM

Title (fr)

PROCÉDÉ DE GÉNÉRATION DE PLASMA DANS DES LIQUIDES À L'AIDE D'UN SYSTÈME À JET

Publication

EP 3122161 B1 20191023 (EN)

Application

EP 15177457 A 20150720

Priority

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Abstract (en)

[origin: EP3122161A1] The invention is related to the jet system for plasma generation in liquids. It consists of a dielectric cylindrical rod with one end conically bevelled. An orifice with the diameter from 0.1 to 2 mm is made along its whole longitudinal axis. A metal electrode is inserted in this orifice so that a free space is created between its end and the conical end of the cylindrical rod. The system further consists of the second electrode which can be coaxially mounted to the ceramic cylindrical rod. One the electrodes is grounded. The cylindrical rod and both electrodes are immersed into the liquid with conductivity of 10-15 000 $\mu\text{S}/\text{cm}$. The subject matter of the invention is also the method of plasma generation using the jet. When direct current or alternating current voltage in the range of 50 Hz-2450 MHz is applied, microbubbles are created due to electric current passing through the orifice in the jet. The electric discharge is ignited inside microbubbles when the voltage amplitude is at least 700 V. Microbubbles with plasma inside further expand into the liquid, and an electromagnetic radiation in the wavelength region up to 1100 nm is emitted.

IPC 8 full level

H05H 1/24 (2006.01)

CPC (source: EP US)

H05H 1/2406 (2013.01 - EP US); **H05H 1/2431** (2021.05 - EP)

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