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Influence of energy deposition mode on plasma bullets development OLIVIER GUAITELLA, LPP, Ecole Polytechnique, UPMC, Université Paris Sud-11, CNRS, Palaiseau, France, FRANÇOIS PECHEREAU, ANNE BOURDON, Ecole Centrale Paris, EM2C, UPR CNRS 288, France, ANTOINE ROUSSEAU, LPP, Ecole Polytechnique, UPMC, Université Paris Sud-11, CNRS, Palaiseau, France, LPP, ECOLE POLYTECHNIQUE, UPMC, UNIVERSITÉ PARIS SUD-11, CNRS, PALAISEAU, FRANCE TEAM, ECOLE CENTRALE PARIS, EM2C, UPR CNRS 288, FRANCE TEAM — Plasma bullet obtained mainly in Ar and He are of growing interest especially for biomedical application. The role of capillary tube surface in the bullet sustainment is still not well understood. In this work, the minimum energy density required to start a bullet is studied for different tube diameter, with several type of high voltage sources. The simultaneous measurement of charge deposition and fast imaging gives an insight on the role of charge adsorption for this kind of propagating mechanism. Molecular gases are also investigated with N2/O2 mixture diluted into Ar, especially for exhibiting the role of attachment on O_2 as a barrier for bullet development.

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