

Abstract Submitted
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Scaling laws in dc micro discharges¹ MARIJA RADMILOVIC-RADJENOVIC, Associate Research Professor, ZORAN PETROVIC, Research Professor, BRANISLAV RADJENOVIC, Associate Research Professor, PAULE MAGUIRE, Research Professor, CHARLES MAHONY, Research Professor, INSTITUTE OF PHYSICS TEAM, VINCA INSTITUTE OF NUCLEAR SCIENCES TEAM, NANOTECHNOLOGY RESEARCH INSTITUTE, UNIVERSITY OF ULSTER TEAM — In order to establish the operation regime of micro discharges we should start from the low pressure discharges and employ the standard scaling laws. Discharges should scale according to the reduced electric field E/N and pd - product proportional to the number of collisions. Finally, the scaling should be made in accordance with the jd^2 - describing the space charge effects [1]. We have calculated the Paschen curves and Volt- Ampere characteristic by using a PIC code and appropriate data for argon in order to establish whether the standard micro discharges operate in Townsend regime or in Glow Regime.

[1] A.V.Phelps, Z.Lj.Petrović and B.M.Jelenković, Phys. Rev. E **47** 2825 (1993)

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