

Abstract Submitted
for the GEC16 Meeting of
The American Physical Society

Characterisation of a dielectric barrier surface twin discharge using defined gas mixtures BJÖRN OFFERHAUS, Ruhr Univ Bochum (AEPT), FRIEDERIKE KOGELHEIDE, Ruhr Univ Bochum (BIMAP), JAN-WILM LACKMANN, NIKITA BIBINOV, Ruhr Univ Bochum (AEPT), RYAN SMITH, VERA BRACHT, Ruhr Univ Bochum (AEPT, BIMAP), KATHARINA STAPELMANN, Ruhr Univ Bochum (BIMAP), PETER AWAKOWICZ, Ruhr Univ Bochum (AEPT), AEPT TEAM, BIMAP TEAM — In the last decades extensive study has been performed on dielectric barrier discharges (DBDs) in several fields of applications of non-thermal atmospheric pressure plasmas. Their applicability ranges from health-promoting effects to the human skin to air decontamination combined with a rather good scalability [1,2]. Further insight into their physical and chemical properties is mandatory for a proper configuration of plasma sources for a given application. In our case a dielectric barrier surface twin discharge is ignited in different gas mixtures. The surface discharge electrode is made of an Al₂O₃ plate working as a dielectric barrier and grid-structured copper traces on each side of the plate. The electrode is connected to a HV-HF plasma generator with external transformer. The plasma parameters are determined via OES using an absolutely calibrated Echelle-spectrometer [3]. **References** [1] U. Kogelschatz, B. Eliasson, W. Egli, *J. Phys. IV France*, **7**, C4-47-C4-66 (1997) [2] A. M. Vandenbroucke, R. Morent, N. De Geyter *et al.*, *Journal of Hazardous Materials*, **195**, 30-54 (2011). [3] N. Bibinov, H. Halfmann, P. Awakowicz *et al.*, *Measurement Science Technology*, **18**, 1327-1337 (2007).

Björn Offerhaus
Ruhr Univ Bochum (AEPT)

Date submitted: 10 Jun 2016

Electronic form version 1.4