

Pencil-on-paper flexible DBD plasma for surface disinfection

Neha Kaushik,^{†a,b} Thuan Nguyen Dao,^{†c} Minh Thu Nguyen,^c Shweta B. Borkar,^a Hoang Tung Nguyen,^c Le Thi Quynh Xuan,^c Tirtha Raj Acharya,^a Thanh Tung Nguyen,^c Eun Ha Choi,^c Nagendra Kumar Kaushik^{*a} and Linh Nhat Nguyen^{*c}

^aPlasma Bioscience Research Center, Department of Electrical and Biological Physics, Kwangwoon University, Seoul 01897, Republic of Korea. Email: kaushik.nagendra@kw.ac.kr

^bDepartment of Biotechnology, College of Engineering, The University of Suwon, Hwaseong 18323, Republic of Korea.

^cLaboratory of Plasma Technology, Institute of Materials Science, Vietnam Academy of Science and Technology, 18 Hoang Quoc Viet, Cau Giay, Hanoi. Email: linhnn@ims.vast.ac.vn

[†]NK and TND contributed equally to this work.

1. The sheet conductivity of the pencil trace measured by a Keithley 4200 SCS Parameter analyzer connected to a four-point probe. The

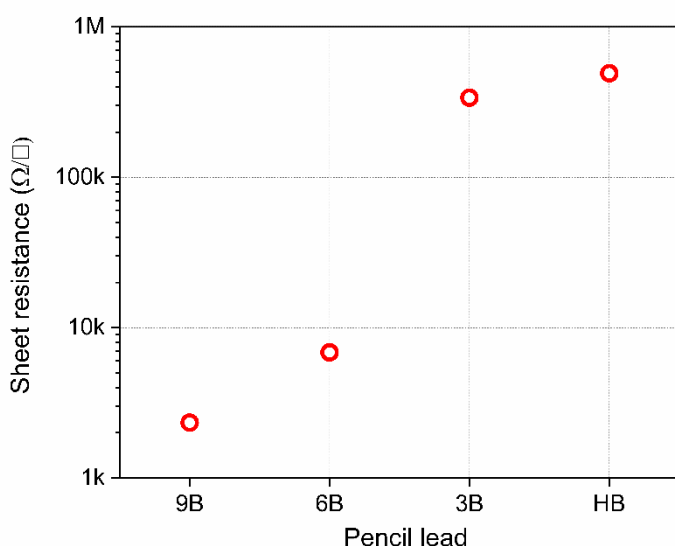


Figure S1: Sheet resistance of different pencil lead types.

2. SEM cross-section of the PoP plasma device

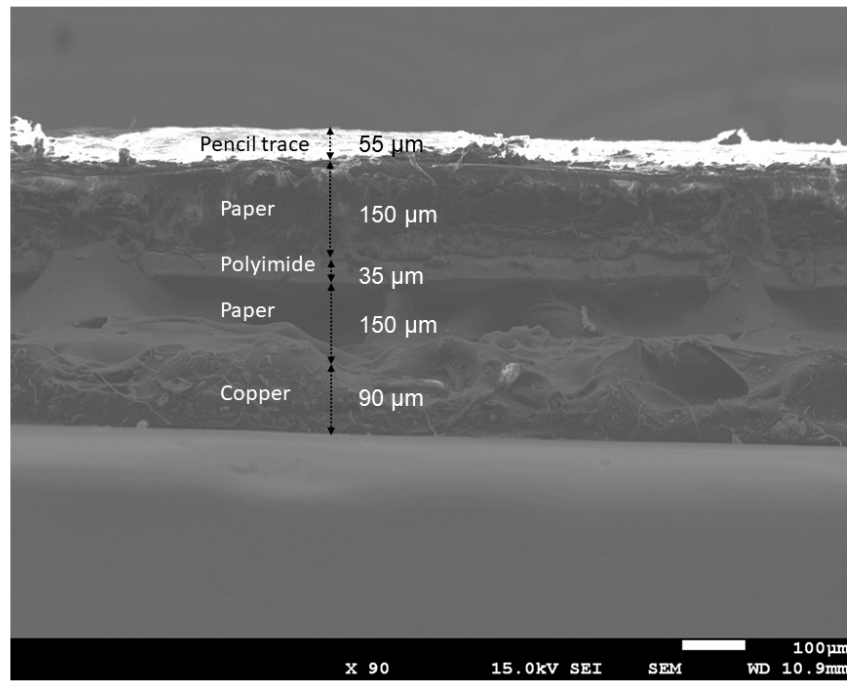


Figure S2: SEM cross-section image of the PoP plasma device reveals the thickness of each component layer.