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Spatial and Temporal Properties of Radiation for Various Electrode Configurations in Arrays of Glass Microchannel Plasma Devices S.H. SUNG, H.C. LEE, A.G. BERGER, S.-J. PARK, J.G. EDEN, University of Illinois at Urbana Champaign — Asymmetric and symmetric structures of microchannel plasma devices having different channel width of 50 – 200 μm are fabricated on 0.4 mm thick sodalime glass substrate. The aspect ratio – channel length to width – has been obtained up to 500. All microplasmas are stable and well confined for several gas pressures of 200 – 700 Torr, and gas mixtures including ambient air. The examination for spatially-resolved emission shows the tendency that peak intensity increases with increasing pressure. The peak emission intensity for 100 μm wide channel plasmas is doubled while increasing pressure from 200 to 600 Torr, but it also depends on geometrical factors. The temporal radiation in 300 – 800 nm for various pressures also shows different feature when the microdischarge is driven by AC source. It will be reported that the effect of electrode configuration on the properties of microplasmas.

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