

**SELF ORGANIZATION TRENDS IN CATHODE
BOUNDARY LAYER DISCHARGE (CBLD) DEVICES
FOR VARIOUS CATHODE MATERIALS***

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Self organization in cathode boundary layer discharge (CBLD) devices in xenon is described for several different cathode materials (Cu, Ag, Ti, W, Mo, et al). A theory for the origin of self organization is developed based on materials properties (especially electrical conductivity and magnetic susceptibility). Most of the results and discussion are based on results at a pressure of 100 Torr. Some excimer emission characteristics are also discussed and related to the self organization. Characterization of the devices is based on tabulated values for materials properties, VUV emission at 172 nm (Xe excimer), optical microscopy images, and SEM energy dispersive x-ray spectroscopy (EDS) of cathode surfaces before and after operation, respectively.

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