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Columnar diamond film coverage of vacuum arc erosion canyons on graphite

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Abstract: Vacuum arcs are generated on dense graphite materials with enhanced local plasma density leading to strong improvement in arc mobility and stability. Observations of cross sections of the arc canyon erosion trace reveals erosion craters covered with a porous columnar film having a diamond structure. Scanning electron microscope (SEM) images of this growth structure are presented at various resolutions.