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Corner wetting during the vapor-liquid-solid growth of faceted nanowires BRIAN SPENCER, University at Buffalo, STEPHEN DAVIS, Northwestern University — We consider the corner wetting of liquid drops in the context of vapor-liquid-solid growth of nanowires. Specifically, we construct numerical solutions for the equilibrium shape of a liquid drop on top of a faceted nanowire by solving the Laplace-Young equation with a free boundary determined by mixed boundary conditions. A key result for nanowire growth is that for a range of contact angles there is no equilibrium drop shape that completely wets the corner of the faceted nanowire. Based on our numerical solutions we determine the scaling behavior for the singular surface behavior near corners of the nanowire in terms of the Young contact angle and drop volume.

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