Determining the elastic constants of rubrene single-crystals\textsuperscript{1}
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Given the limited dimensions of as-grown crystals and associated handling difficulty, the elastic buckling instability is chosen as a metrology tool for determining the in-plane elastic constants. Our results show that ultrathin (200nm - 1000nm) rubrene crystals exhibit anisotropic wrinkling wavelengths as a function of crystallographic direction, which can be correlated to the anisotropic nature of its molecular packing. An adaptive intermolecular reactive bond order potential (AIREBO) is employed to calculate the nine elastic constants corresponding to orthorhombic rubrene.

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