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Low Friction at the Nanoscale of Hydrogenated Fullerene-Like Carbon Films

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Received: 13 April 2020; Accepted: 27 June 2020; Published: 1 July 2020

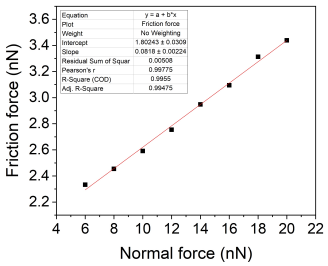

Figure S1. Friction coefficient obtained from the slope of normal-friction force curve for sample 0% H. The slope of the linear relationship is observed with the value of 0.082, which is utilized as the friction coefficient in this work. It can effectively exclude the influence from adhesive force at the nanometer scale.

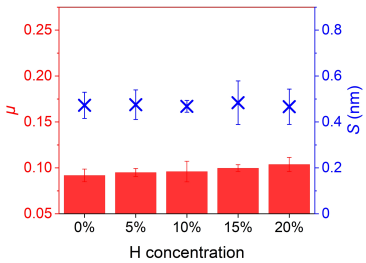

Figure S2. Friction coefficient and surface roughness of the FL-C:H films measured in ambient air. The friction coefficient shows a slight increase with the hydrogen concentration under ambient conditions, that a water film may play an important role between the two sliding surfaces.

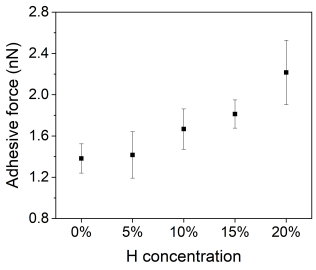

Figure S3. Measured adhesive force of each hydrogen concentration in nitrogen averaged over all ten areas by force spectroscopy curve.