

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: **Drying process of monolayer graphene membrane with linear defects.** *In-situ* optical observations showing the crack appeared around the wrinkle of graphene membrane. And the graphene membrane eventually broken when the liquid evaporated.

File Name: Supplementary Movie 2

Description: **Drying process of single-crystal graphene membrane without linear defects.** The single-crystal graphene membrane without wrinkle kept intact during the whole drying process. The white particles on the suspended graphene membrane revealed the existence of graphene.

File Name: Supplementary Movie 3

Description: **Drying process of bilayer graphene membrane.** *In-situ* optical observations revealing the liquid evaporated from the center to the edge of a hole, where the bilayer graphene membrane with wrinkles remains intact after the liquid was totally dried.