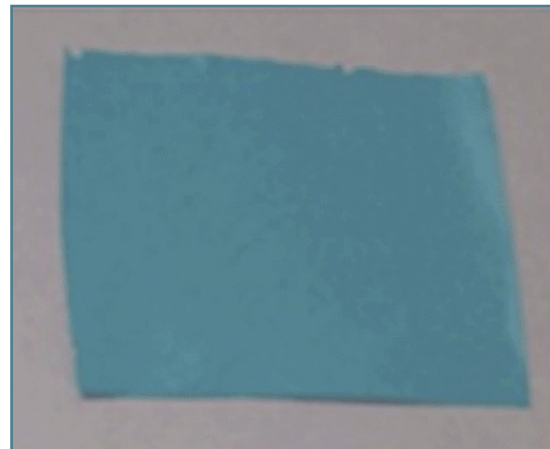


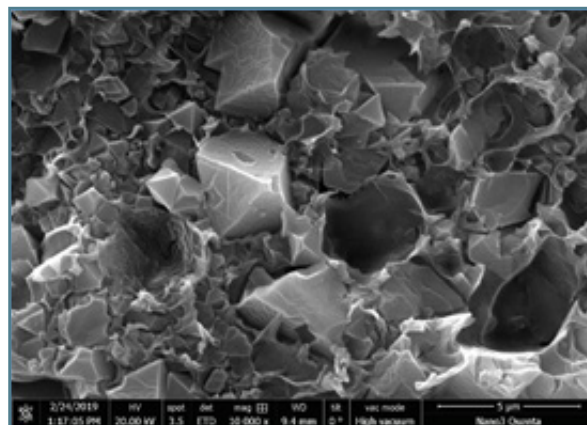
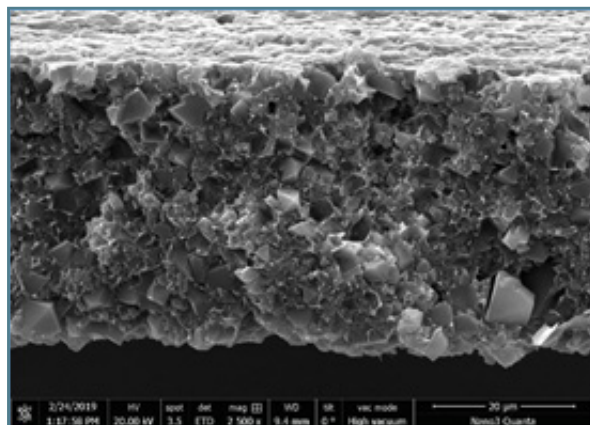
29-3150 • HKUST-1 MMM is a MOF that is incorporated into polymer mixed-matrix membrane (MMM) with ~35 wt% HKUST-1 MOF loading. MMM is prepared from polyvinylidene difluoride (PVDF), which acts as an effective binder for MOF, while still allowing the pores to be permeable and accessible to adsorbates [1-2].

The MOF/PVDF films form homogeneous layered structures after drying, giving durable, large-area, freestanding MMMs with good mechanical stability and flexibility. Characterization of the films showed that the MOFs are highly crystalline and remain porous within the MMM (**BET surface area: 500 m²/g**)

HKUST-1 MMM allows further chemical modification through postsynthetic modification and postsynthetic exchange processes.



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SEM images of HKUST-1 MMM (~35 wt%) with cross-section and plane-view

HKUST-1 MMM is resilient to mechanical stress and can be easily handled in ambient conditions using nitrile gloves (recommended). The long-term storage (>1 week) should be performed under moisture-free conditions. The HKUST-1 MMM is light and dry-air-stable.

References:

1. *Angew. Chem. Int. Ed.* **2015**, 54, 9029
2. *Chem. Sci.*, **2016**, 7, 2711

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