

SEM - FEI Quanta 200 II

Date: 2019-12-11

Tags: SEM 07/10/2019Synth TescanSC

Created by: James Bird

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Goal : Obtain micrographs to reassess vacuum oven-dried film homogeneity with a combination of backscatter and secondary electron detection

Procedure :

- Samples (see 'SEM stub preparation for film characterisation') loaded into SEM chamber and vacuum acquired
- 8 kV accelerating voltage set for electron beam
- WD between either roughly 6 or 10 mm
- Everhart-Thornley secondary electron (SE) and back-scatter electron (BSE) detectors employed.

Results :

All micrographs are of vacuum oven-dried $\text{Ti}_3\text{C}_2\text{T}_z$ film.

Detector	Filename prefix
Secondary electron	SE_vac_dried_film
Back-scatter electron	BSD_vac_dried_film
Both detectors combined	combined_vac_dried_film

Use of BSE detector only gave notable contrast within the film when the electron beam was accelerated with 8 kV (not at 5 kV as seen previously in Exp. 'SEM - Tescan Mira3 III'). Attempts at revealing any topographical difference when combining BSE and SE detection were futile - there appears to be no obvious link between topographical features and variation in backscatter electron contrast.

Attached files

combined_vac_dried_film_001.tif
sha256: a1fd3f775bd3c8473a33f06579916324bc91eb8b95447e19c386ede03d919211

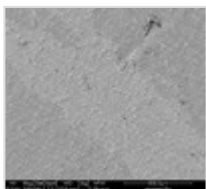
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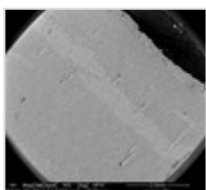
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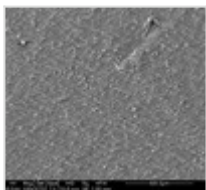
combined_vac_dried_film_02.tif

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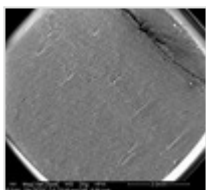
SE_vac_dried_film_001.tif

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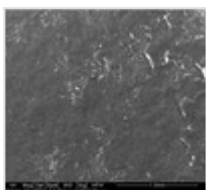
SE_vac_dried_film_02.tif

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SE_vac_dried_film_003.tif

sha256: d0d58f90683ac8505378461e29569c6eb2dfa71e950484fcf8b8d068fbb93184



BSD_vac_dried_film_001.tif

sha256: e70c6540ad3fcb384b21ba13b9fa9eac880c86f4bb14eb571b19f87a501c3199

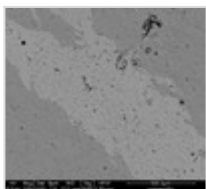
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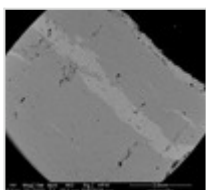
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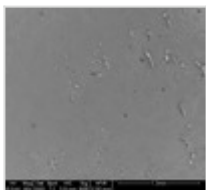
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BSD_vac_dried_film_003.tif

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Link: <https://frankel-elab.manchester.ac.uk/experiments.php?mode=view&id=34>