

*Supplementary Materials*

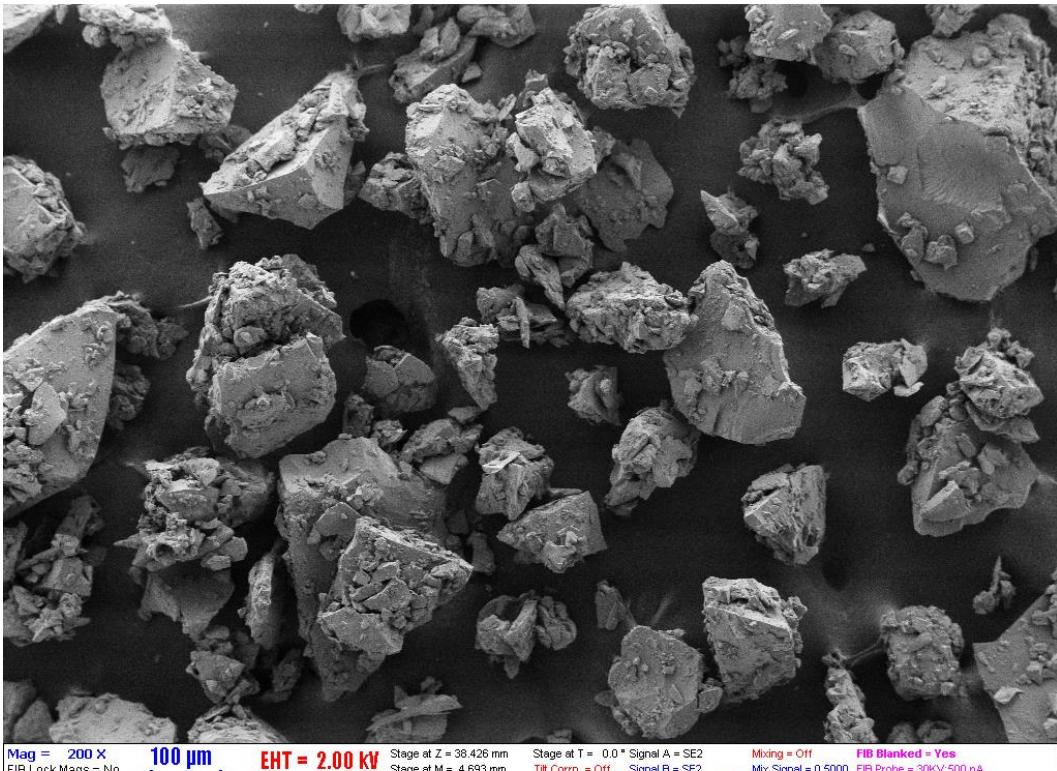
**Imidazolium ionic liquids as designer solvents confined in silica nanopores**

**Ana-Maria Putz, Adél Len, László Trif, Zsolt Endre Horváth and László Almásy**

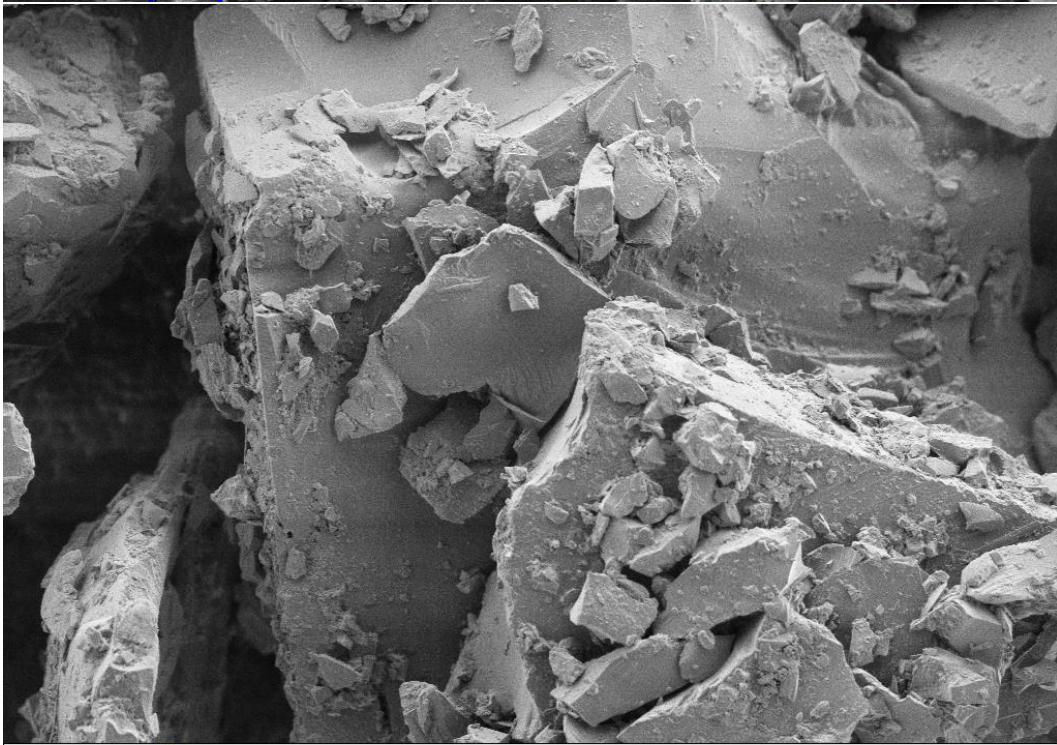
Content

1. SEM micrographs of the IL – silica nanocomposites
2. EDS spectra of the IL – silica nanocomposites

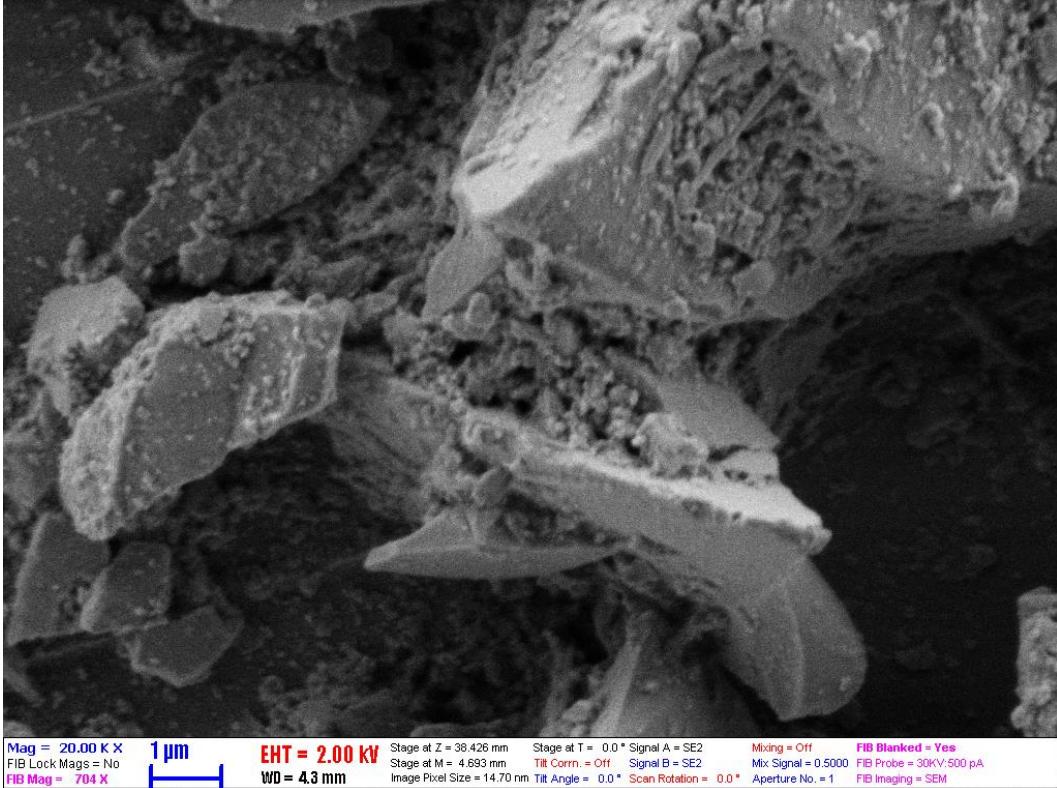
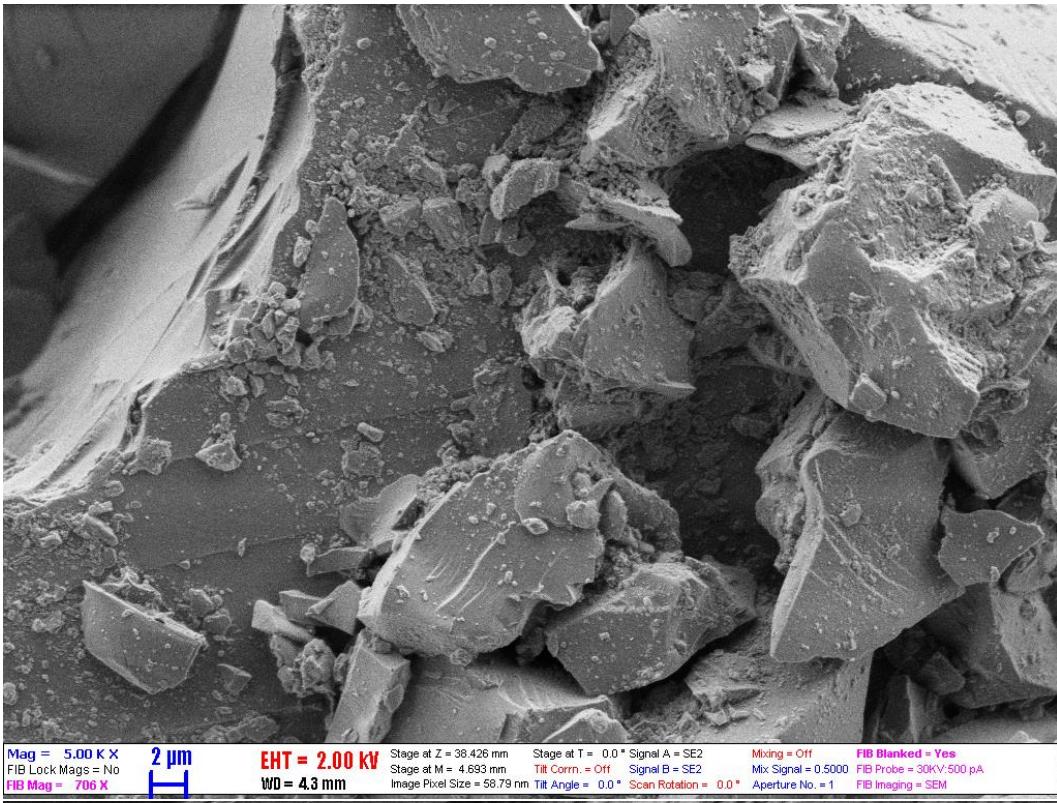
1. SEM micrographs of the IL – silica nanocomposites

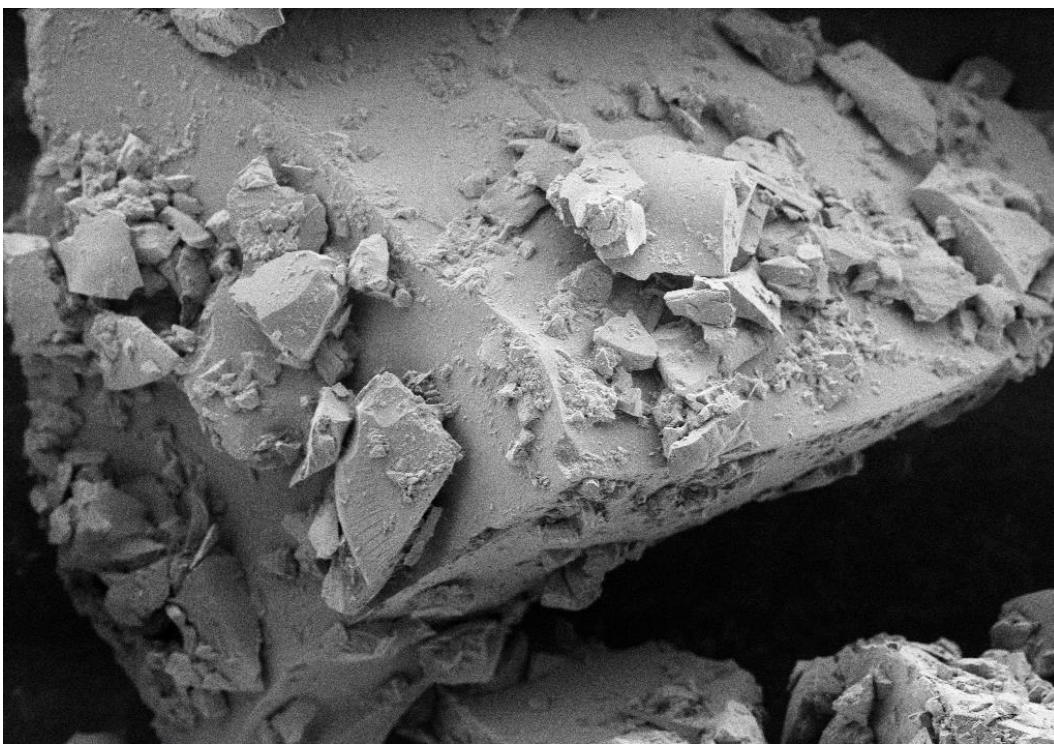


Mag = 200 X EHT = 2.00 kV Stage at Z = 38.426 mm Stage at T = 0.0 \* Signal A = SE2 Mixing = Off FIB Blanked = Yes  
FIB Lock Mags = No Stage at M = 4.593 mm Tilt Corr. = Off Signal B = SE2 Mix Signal = 0.5000 FIB Probe = 30kV:500 pA  
FIB Mag = 704 X WD = 4.3 mm Image Pixel Size = 1.488  $\mu$ m Tilt Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1 FIB Imaging = SEM



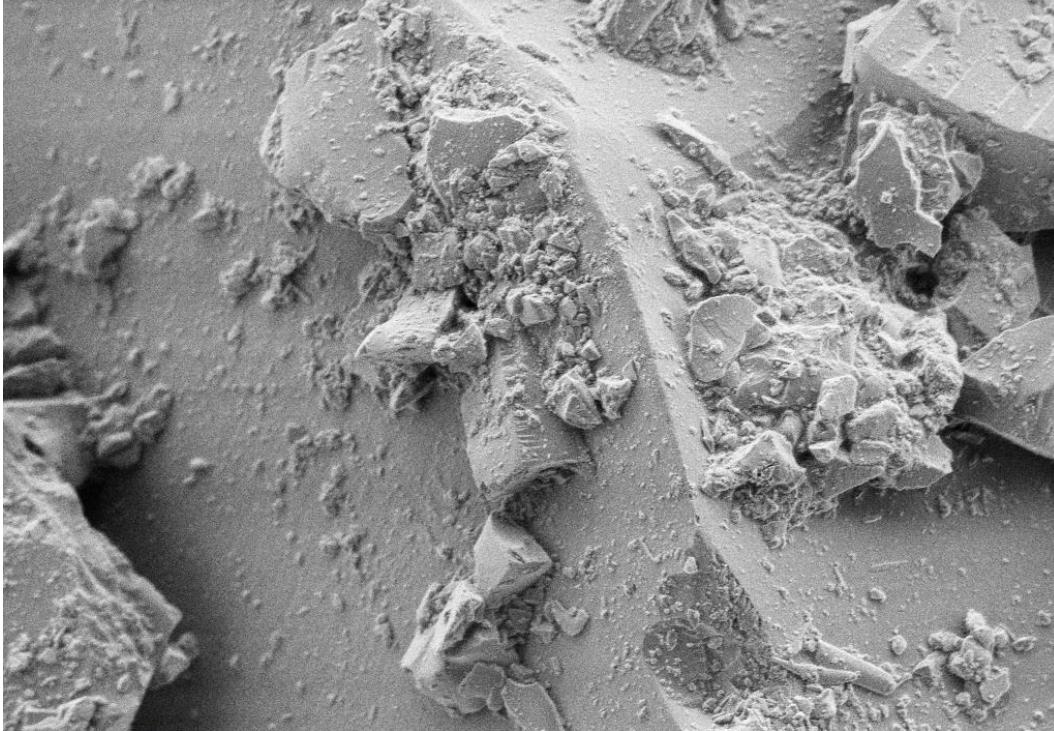
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FIB Lock Mags = No Stage at M = 4.593 mm Tilt Corr. = Off Signal B = SE2 Mix Signal = 0.5000 FIB Probe = 30kV:500 pA  
FIB Mag = 704 X WD = 4.4 mm Image Pixel Size = 294.6 nm Tilt Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1 FIB Imaging = SEM





Mag = 1.00 K X      10  $\mu$ m  
FIB Lock Mags = No  
FIB Mag = 704 X      EHT = 2.00 kV  
WD = 4.4 mm

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2  
Image Pixel Size = 294.6 nm      Tit Angle = 0.0 \* Scan Rotation = 0.0 \*  
Mixing = Off      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Aperture No. = 1      FIB Imaging = SEM



Mag = 5.00 K X      1  $\mu$ m  
FIB Lock Mags = No  
FIB Mag = 704 X      EHT = 2.00 kV  
WD = 4.4 mm

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2  
Image Pixel Size = 58.79 nm      Tit Angle = 0.0 \* Scan Rotation = 0.0 \*  
Mixing = Off      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Aperture No. = 1      FIB Imaging = SEM

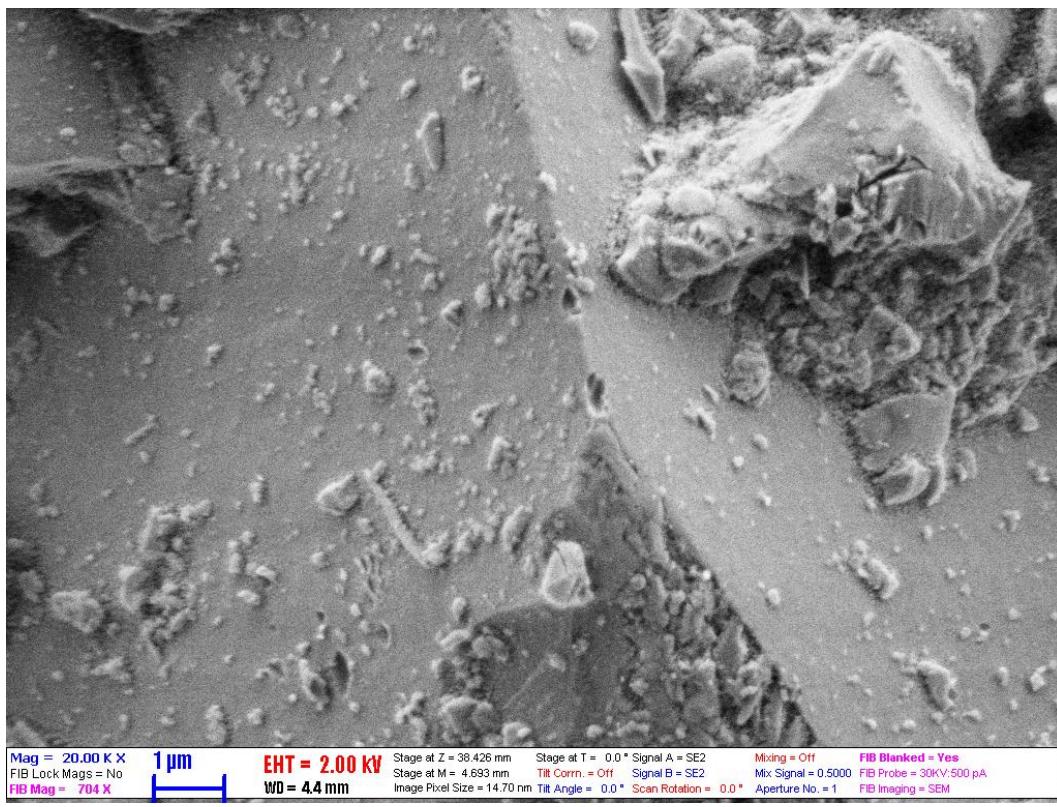
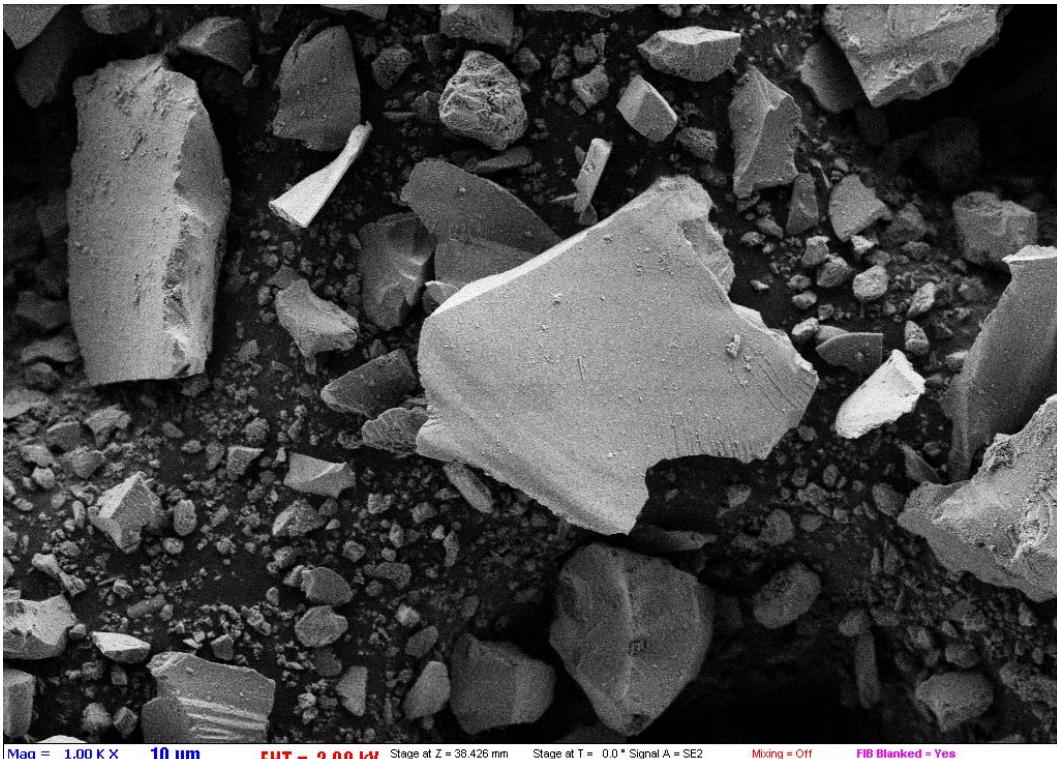


Figure S1 IM-0

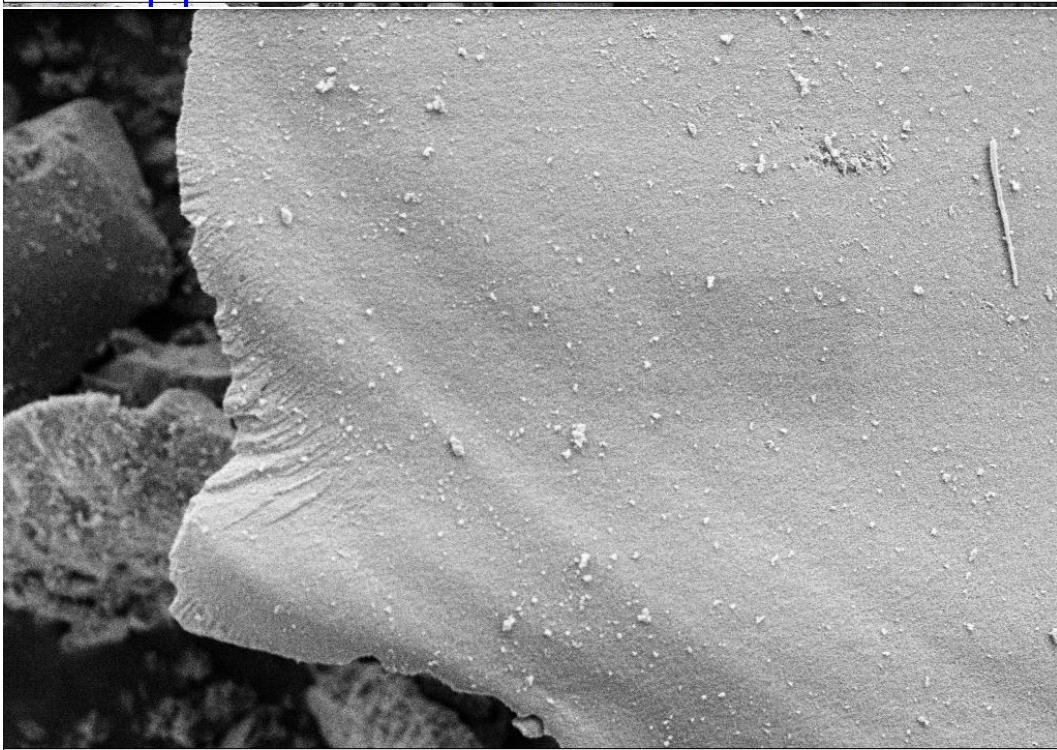


Mag = 1.00 K X  
FIB Lock Mags = No  
FIB Mag = 713 X

10 µm

EHT = 2.00 kV  
WD = 4.1 mm

Stage at Z = 38.426 mm Stage at T = 0.0 \* Signal A = SE2 Mixing = Off  
Stage at M = 4.593 mm Til Corr. = Off Signal B = SE2 Mix Signal = 0.5000 FIB Blanked = Yes  
Image Pixel Size = 294.6 nm Til Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1 FIB Probe = 30kV:500 pA  
FIB Imaging = SEM

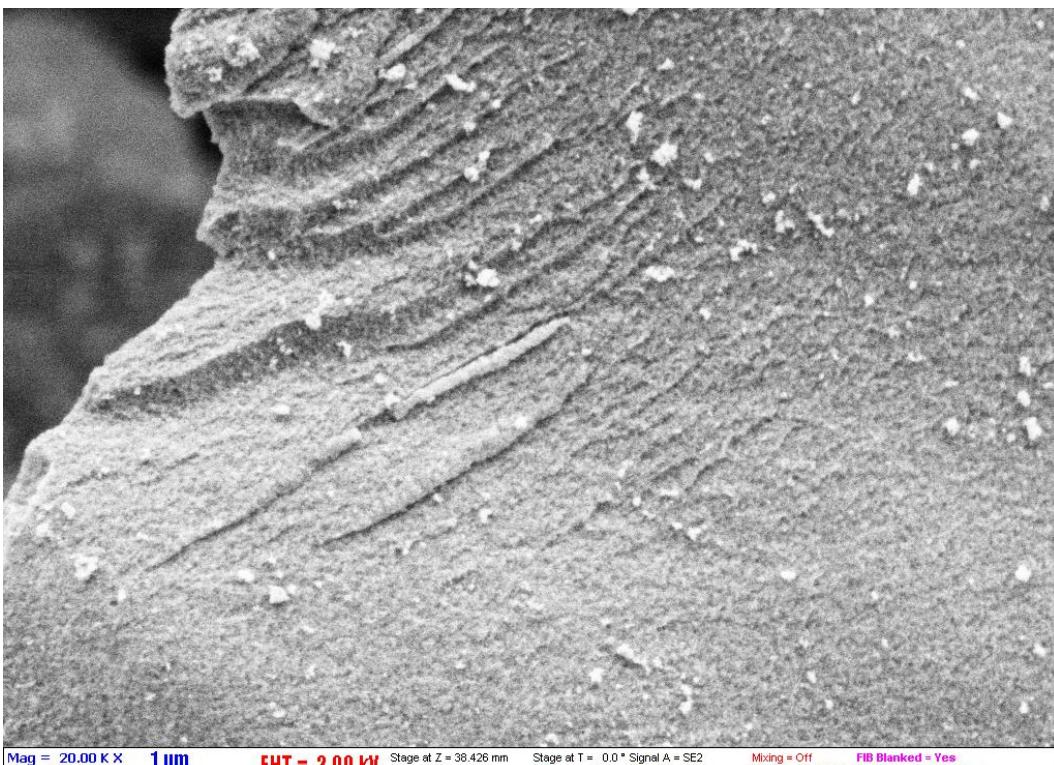


Mag = 5.00 K X  
FIB Lock Mags = No  
FIB Mag = 704 X

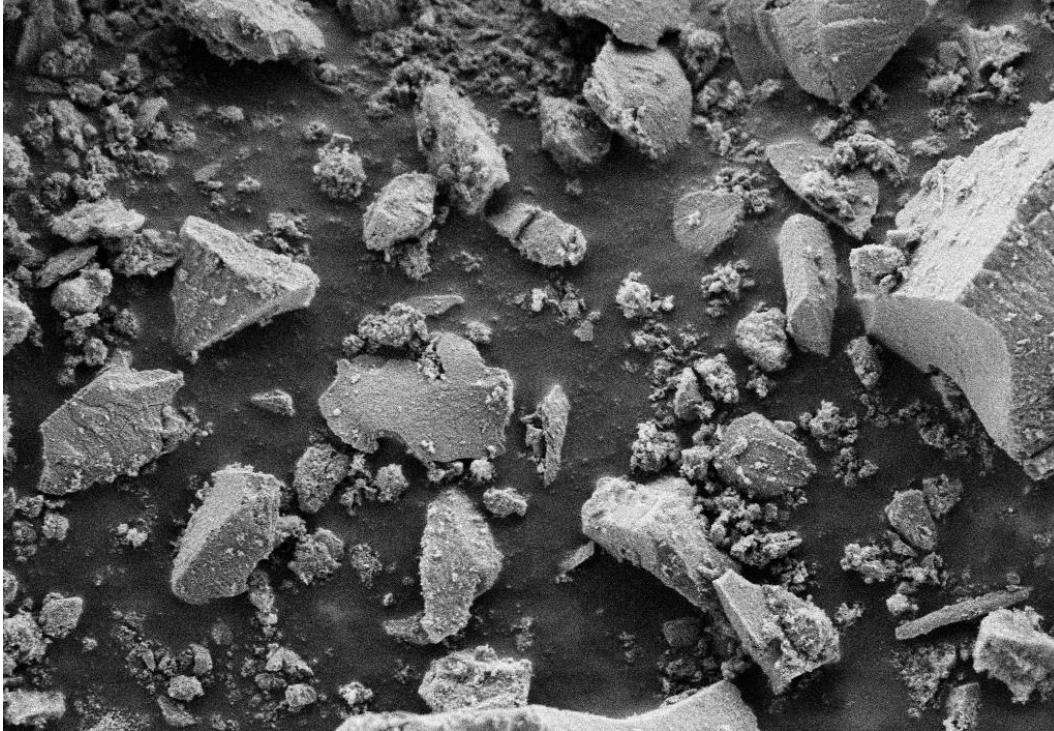
1 µm

EHT = 2.00 kV  
WD = 4.1 mm

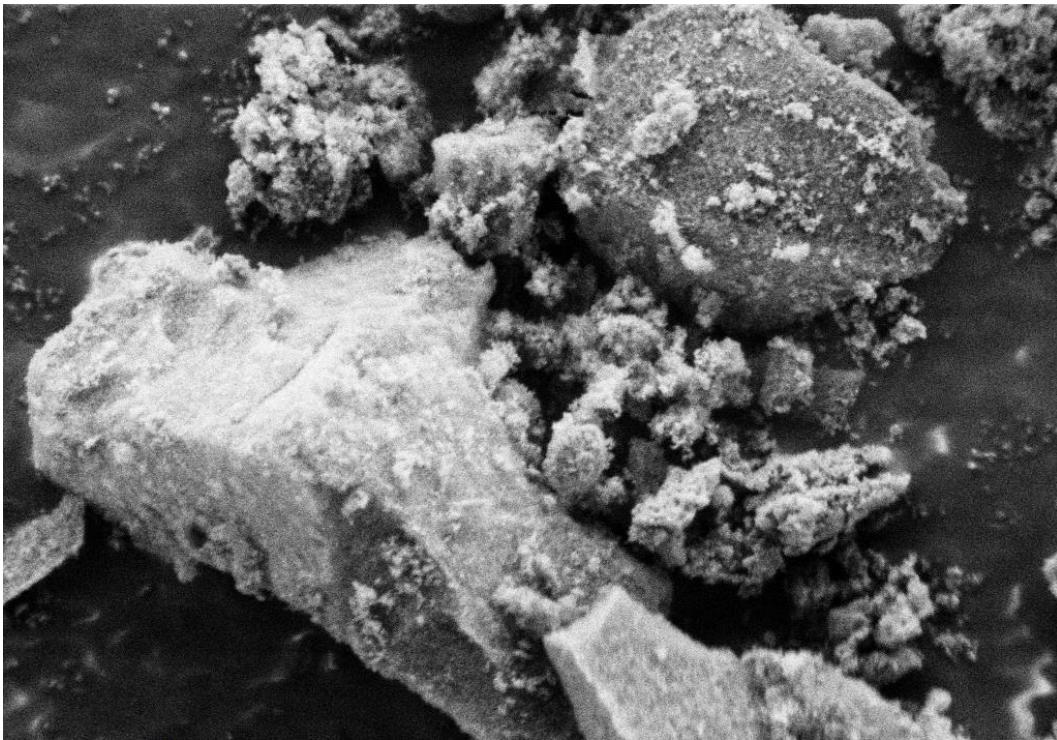
Stage at Z = 38.426 mm Stage at T = 0.0 \* Signal A = SE2 Mixing = Off  
Stage at M = 4.593 mm Til Corr. = Off Signal B = SE2 Mix Signal = 0.5000 FIB Blanked = Yes  
Image Pixel Size = 58.79 nm Til Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1 FIB Probe = 30kV:500 pA  
FIB Imaging = SEM



Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.1 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM

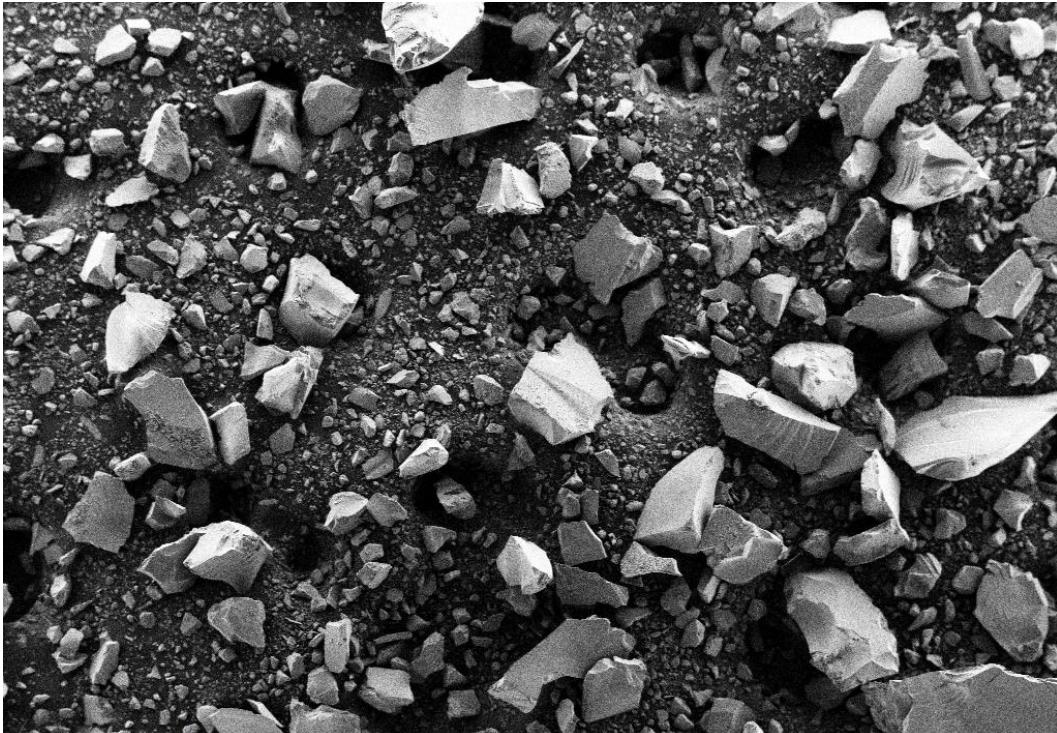


Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.2 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.2 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM

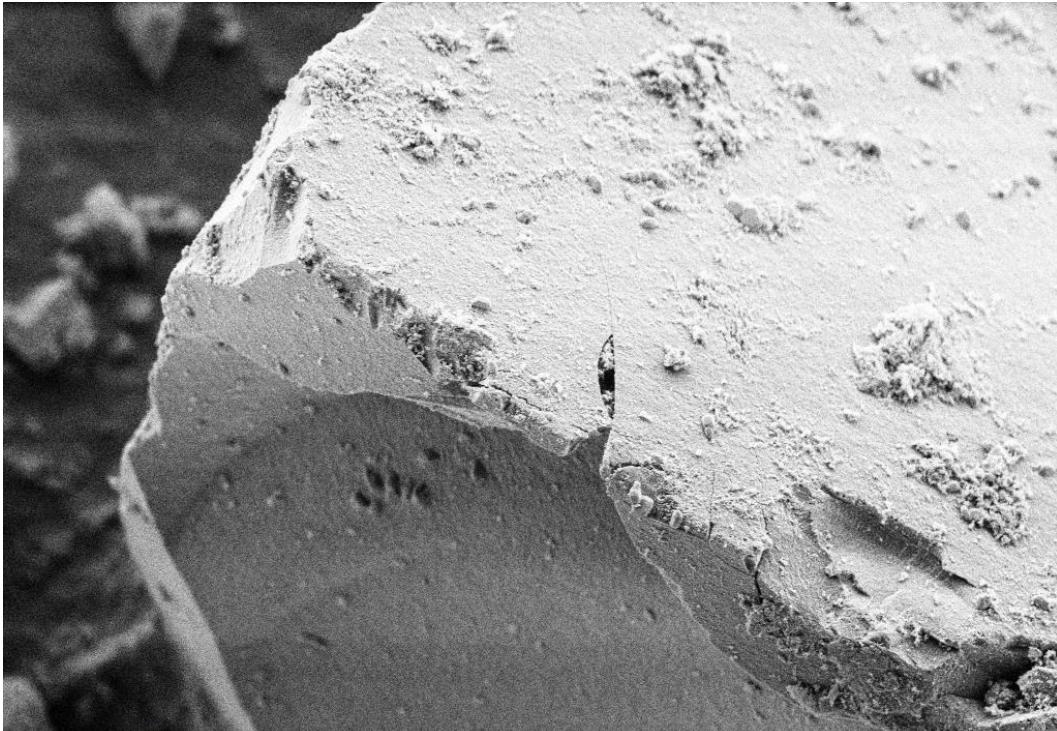


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FIB Lock Mags = No      WD = 4.0 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 1.488  $\mu$ m      Tilt Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM



Mag = 1.00 K X      10 µm      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.0 mm      Stage at M = 4.693 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 294.6 nm      Tit Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM



Mag = 5.00 K X      1 µm      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.0 mm      Stage at M = 4.693 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 58.79 nm      Tit Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM

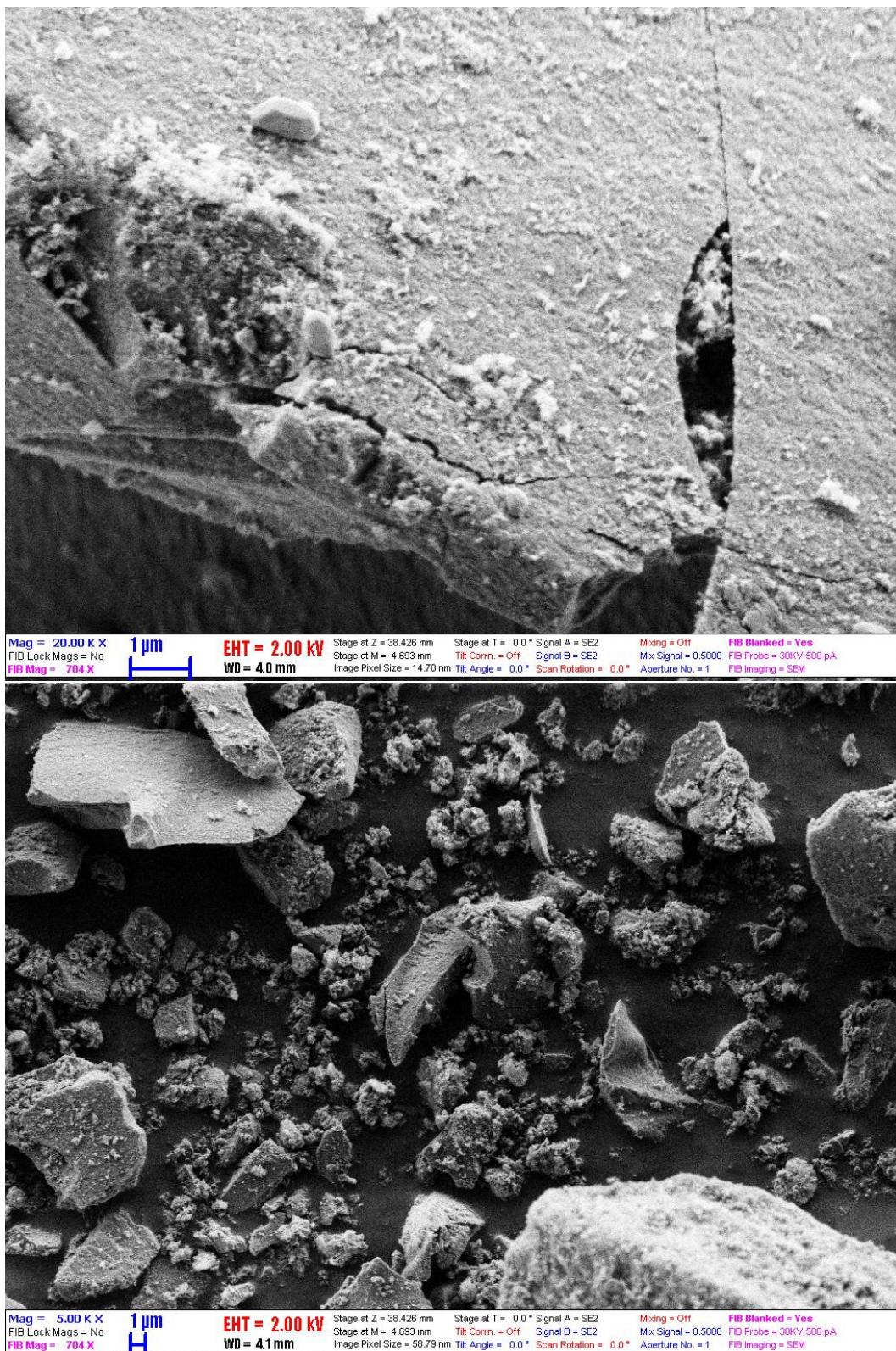
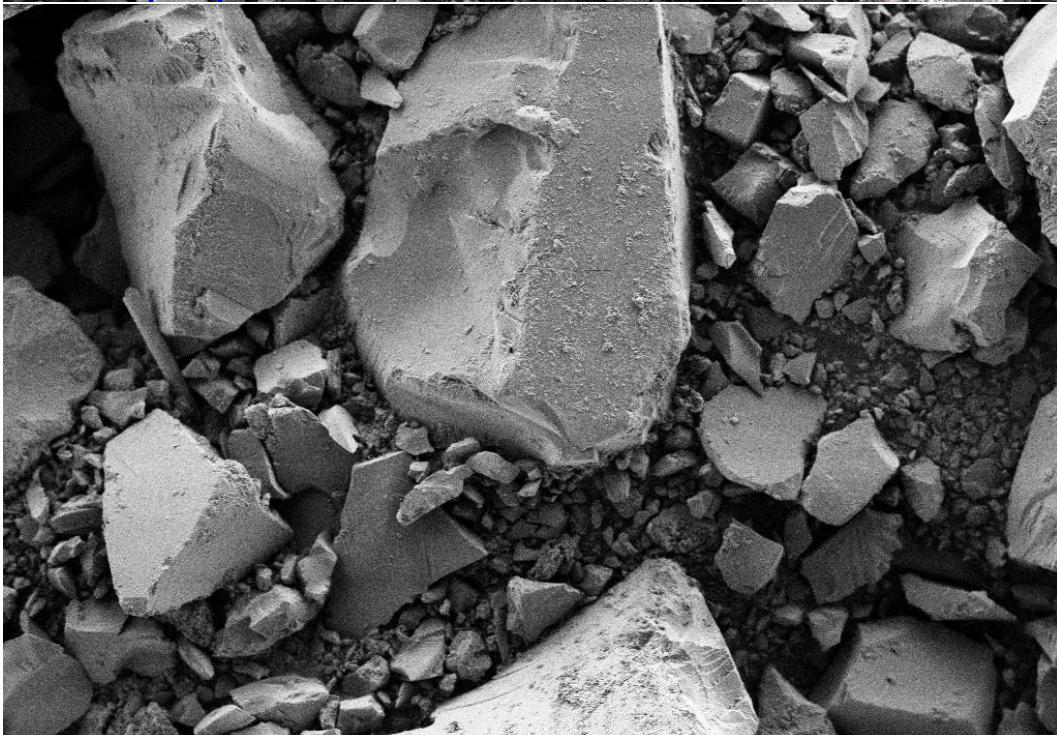


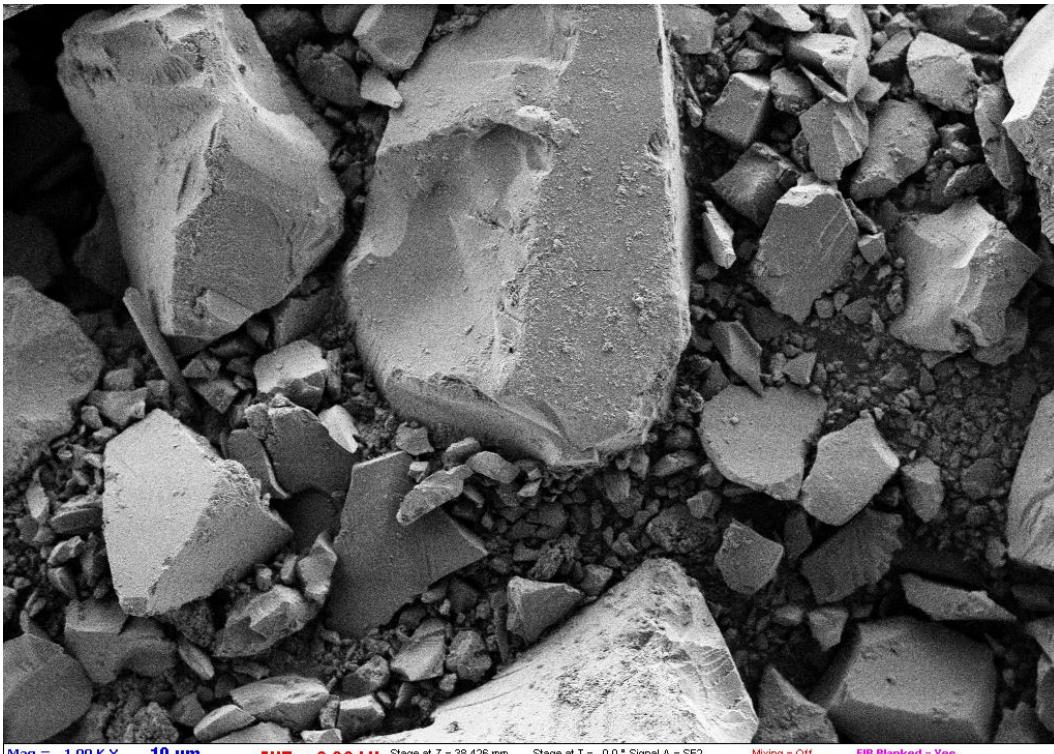
Figure S2. IM-BF4-0.1



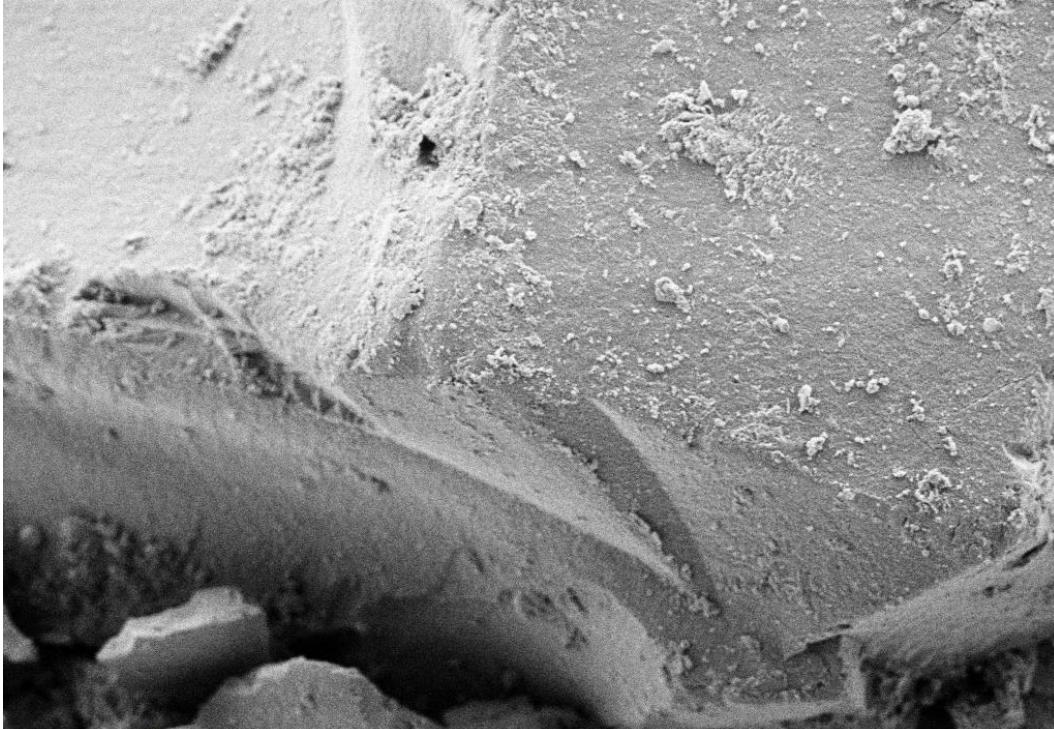
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FIB Lock Mags = No      WD = 4.1 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 1.488 µm      Tilt Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM



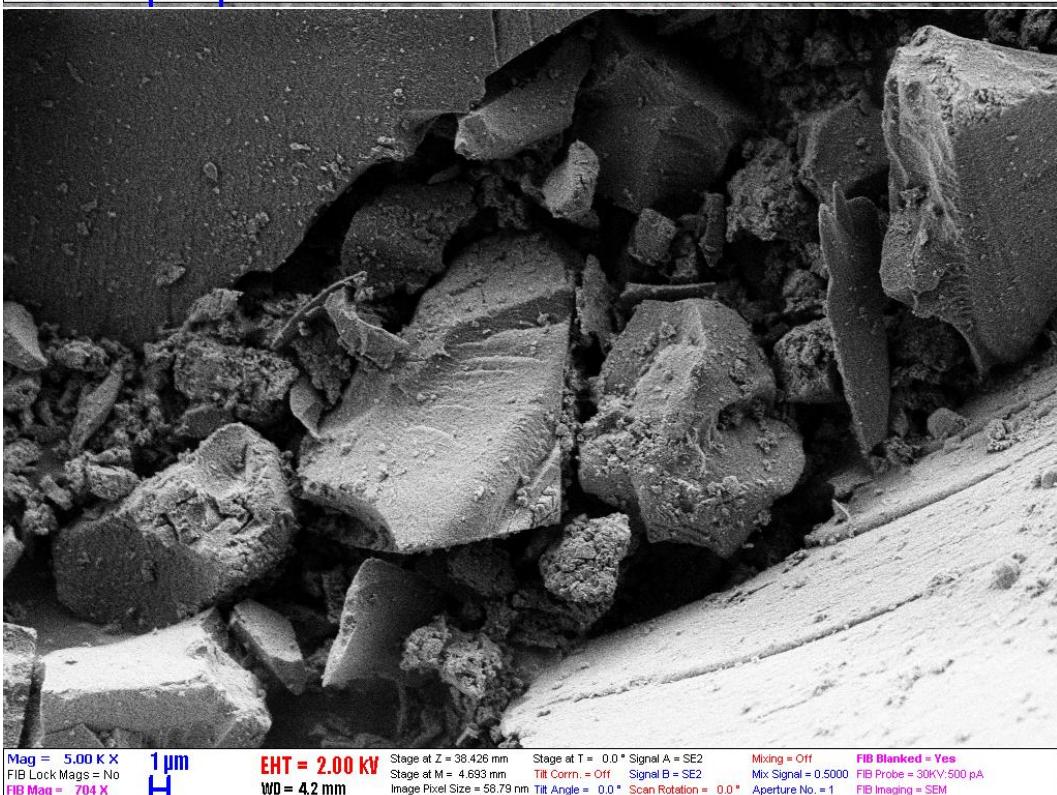
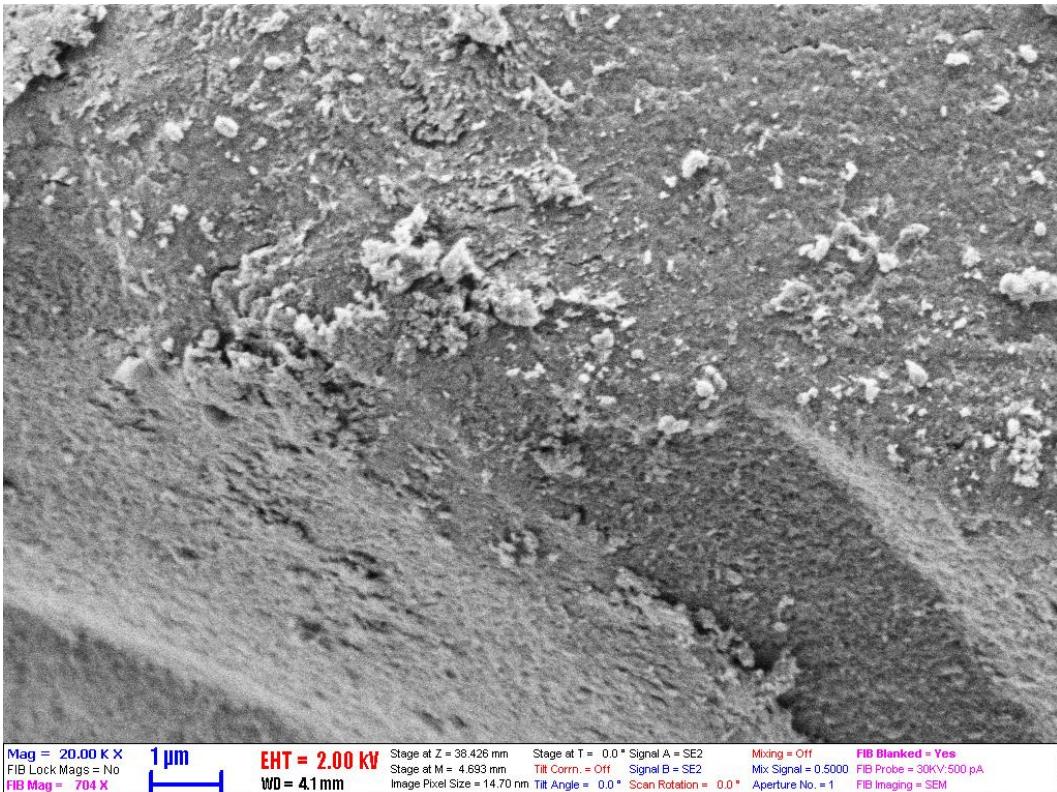
Mag = 1.00 kX      10 µm      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.1 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 294.6 nm      Tilt Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM

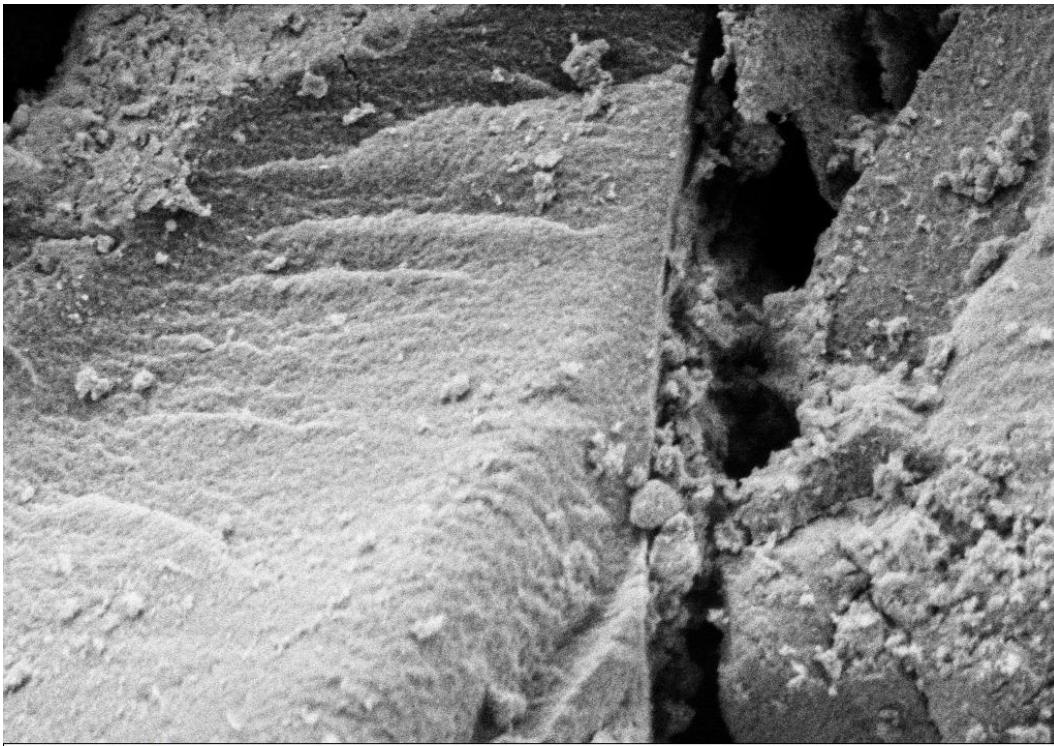


Mag = 1.00 K X    10  $\mu$ m    EHT = 2.00 kV    Stage at Z = 38.426 mm    Stage at T = 0.0 \* Signal A = SE2  
FIB Lock Mags = No    FIB Mag = 704 X    WD = 4.1 mm    Stage at M = 4.593 mm    Stage at M = 4.593 mm    Mixing = Off  
Tilt Corr. = Off    Signal B = SE2    Image Pixel Size = 294.6 nm    Tilt Angle = 0.0 \* Scan Rotation = 0.0 \*    FIB Blanked = Yes  
Mix Signal = 0.5000    FIB Probe = 30kV:500 pA  
Aperture No. = 1    FIB Imaging = SEM



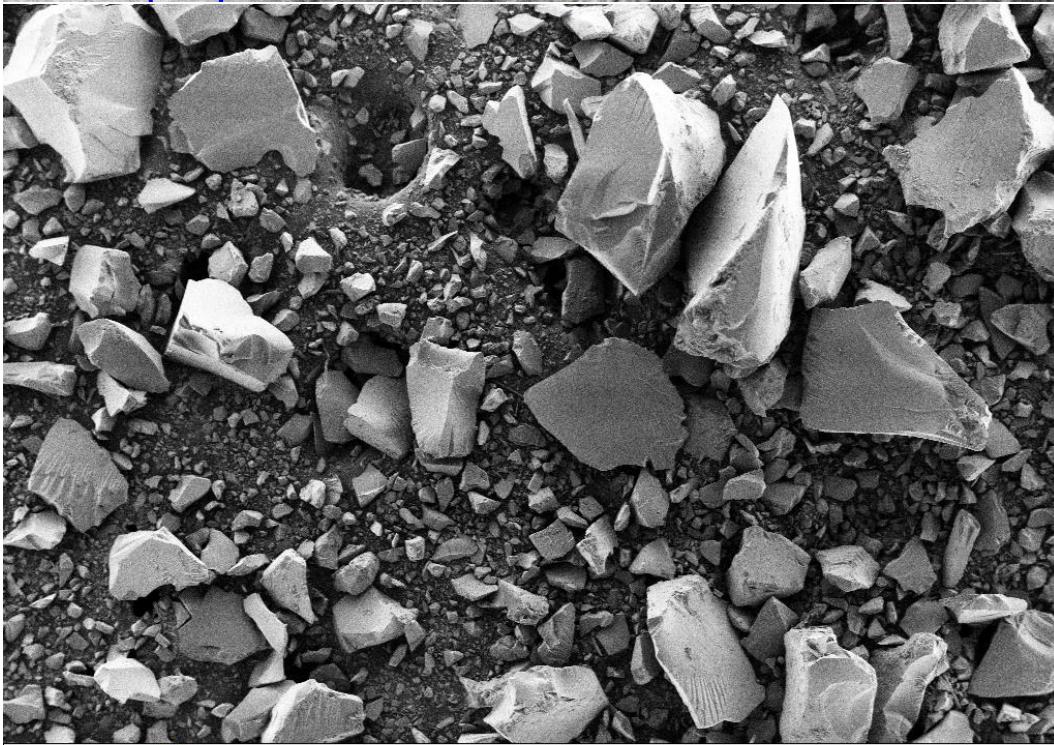
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FIB Lock Mags = No    FIB Mag = 704 X    WD = 4.1 mm    Stage at M = 4.593 mm    Stage at M = 4.593 mm    FIB Blanked = Yes  
Tilt Corr. = Off    Signal B = SE2    Image Pixel Size = 58.79 nm    Tilt Angle = 0.0 \* Scan Rotation = 0.0 \*    Mix Signal = 0.5000  
FIB Probe = 30kV:500 pA  
Aperture No. = 1    FIB Imaging = SEM





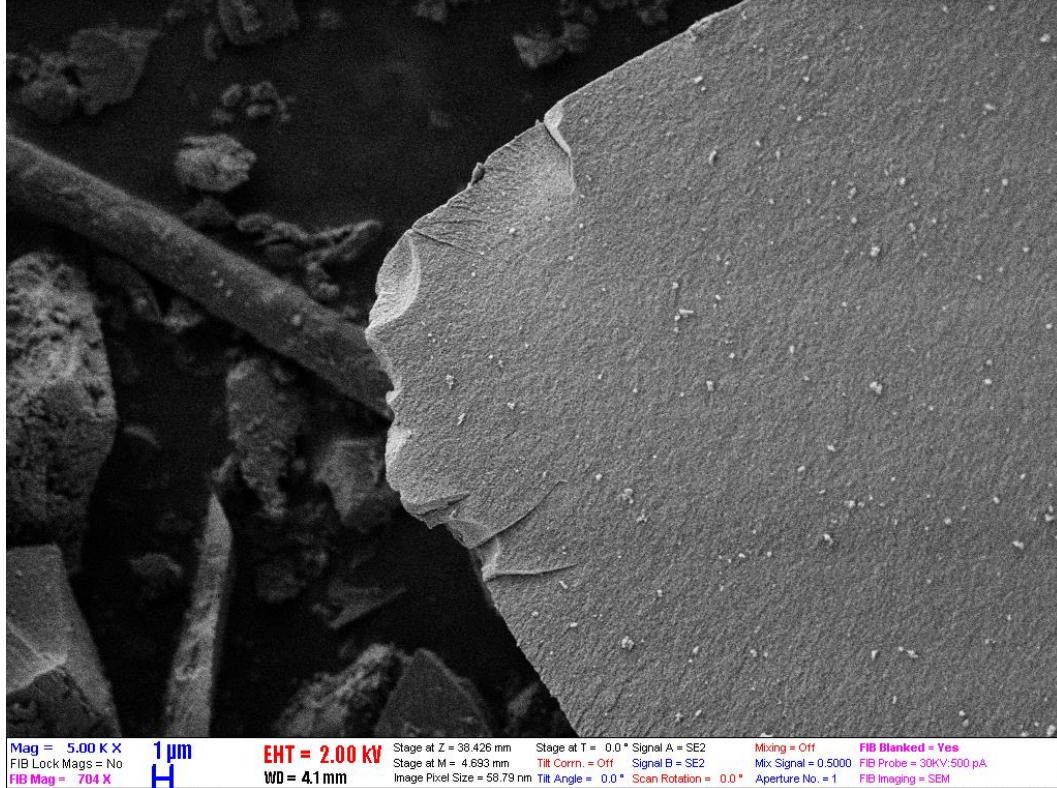
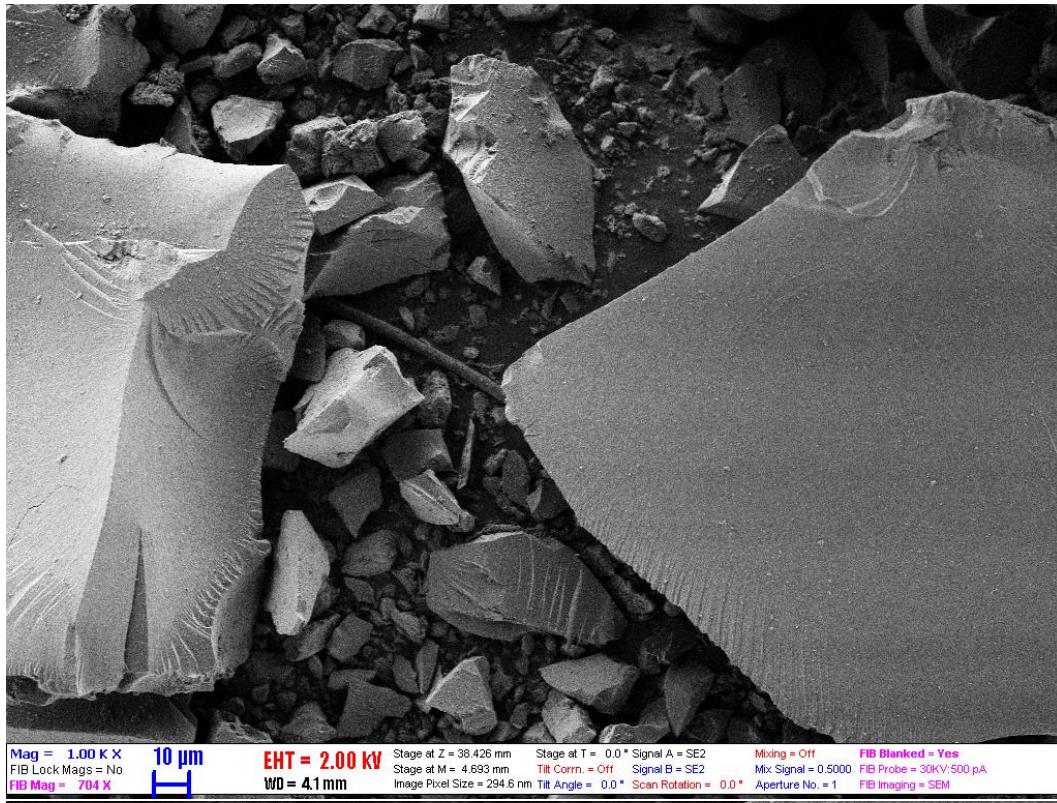
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FIB Mag = 704 X

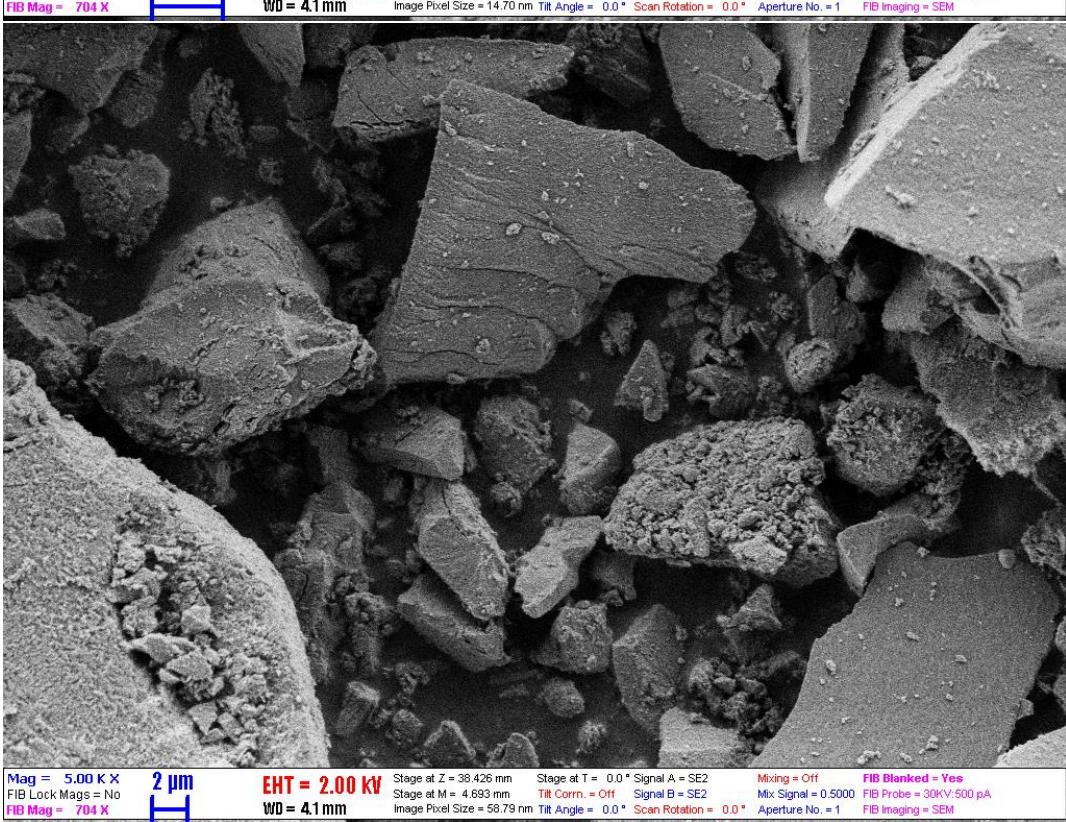
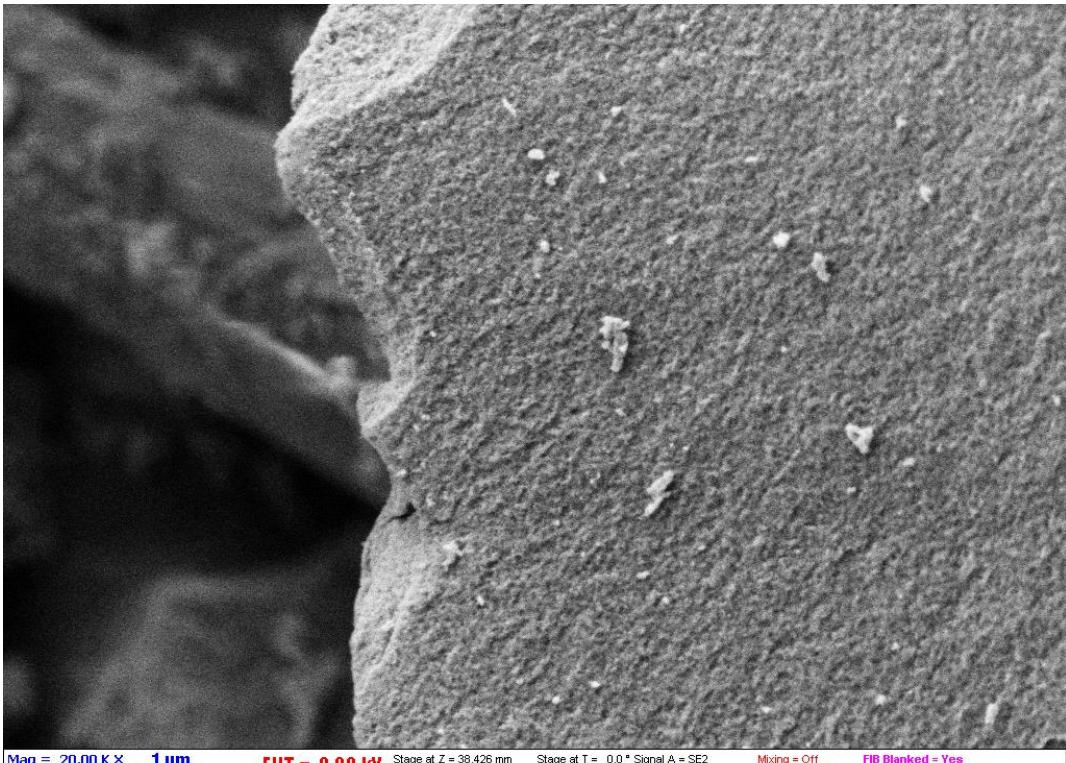
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Stage at M = 4.693 mm      Tilt Corr. = Off Signal B = SE2  
Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 ° Scan Rotation = 0.0 °  
Mixing = Off      Mix Signal = 0.5000  
FIB Blanked = Yes      FIB Probe = 30kV:500 pA  
Aperture No. = 1      FIB Imaging = SEM



Mag = 200 X      100  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.1 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2  
Stage at M = 4.693 mm      Tilt Corr. = Off Signal B = SE2  
Image Pixel Size = 1.488  $\mu$ m      Tilt Angle = 0.0 ° Scan Rotation = 0.0 °  
Mixing = Off      Mix Signal = 0.5000  
FIB Blanked = Yes      FIB Probe = 30kV:500 pA  
Aperture No. = 1      FIB Imaging = SEM





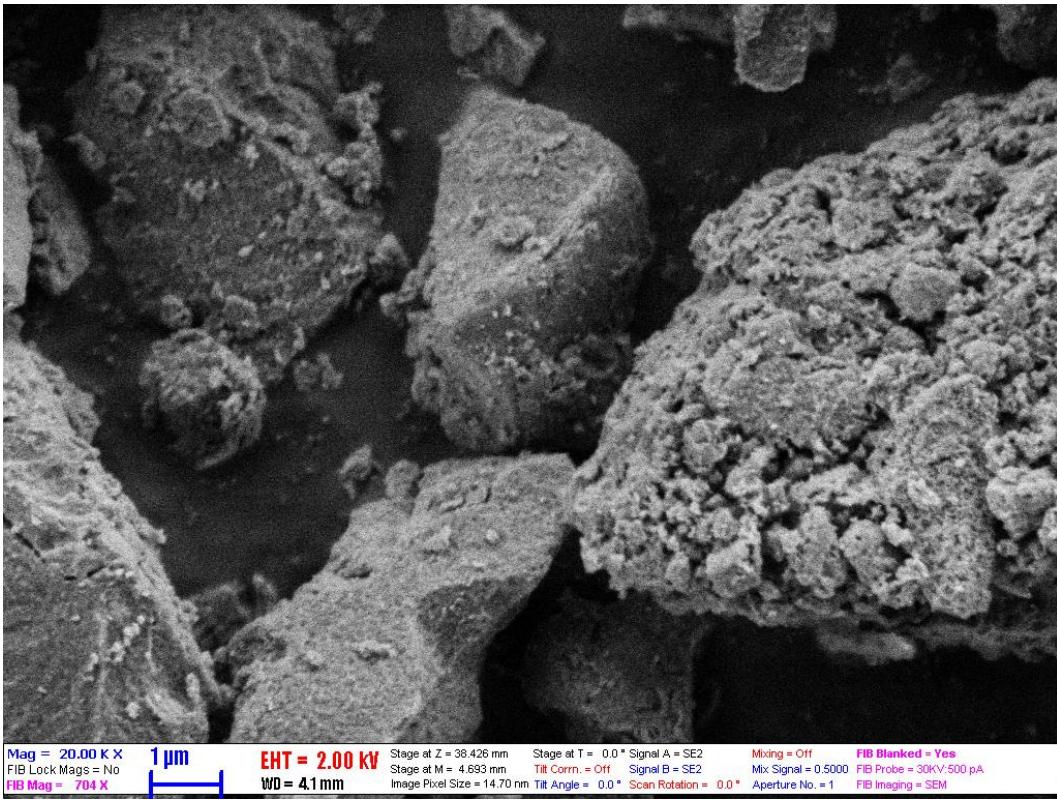
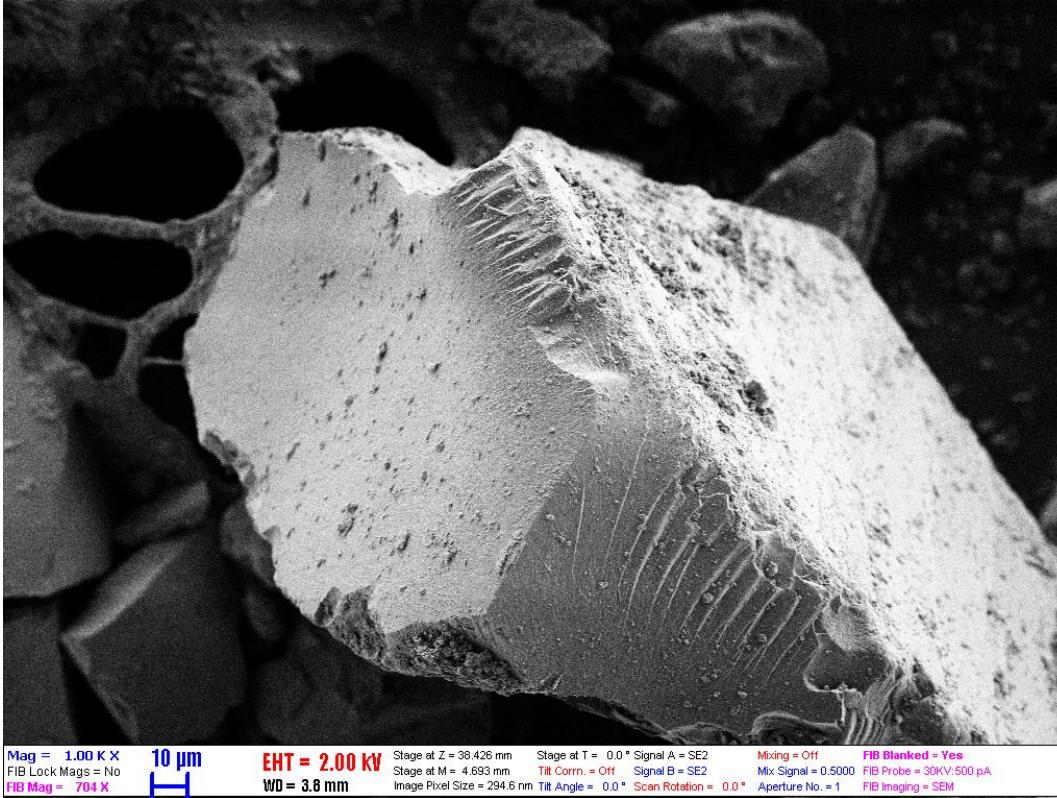
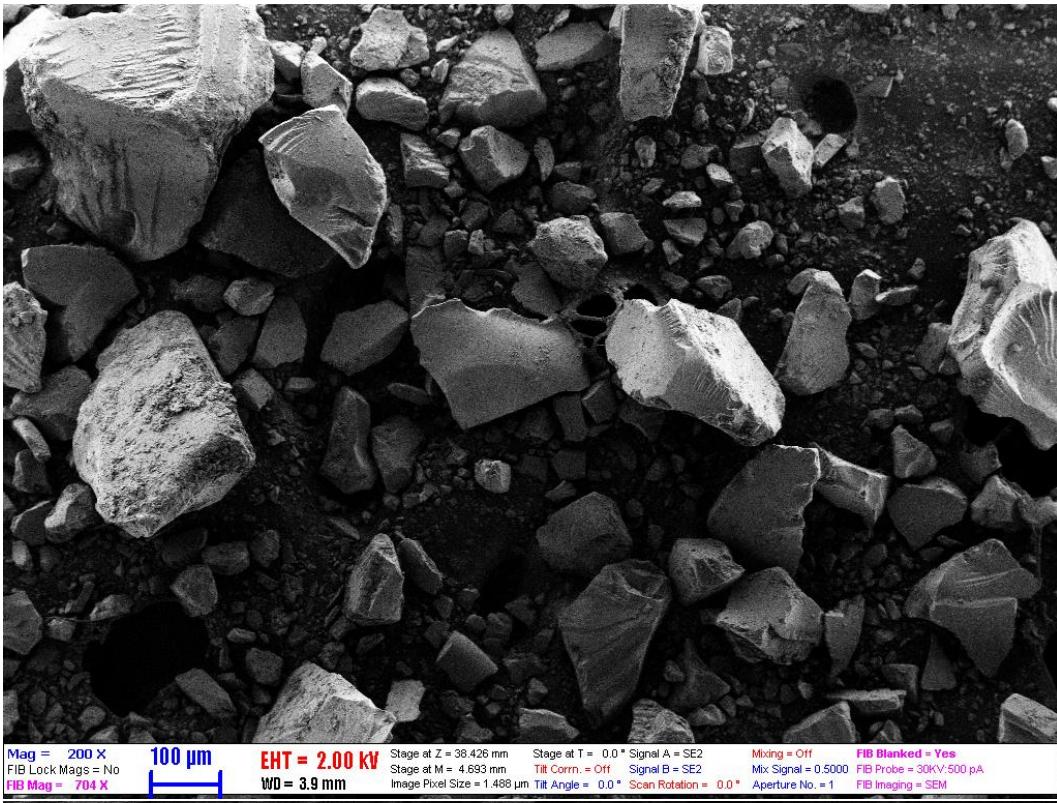
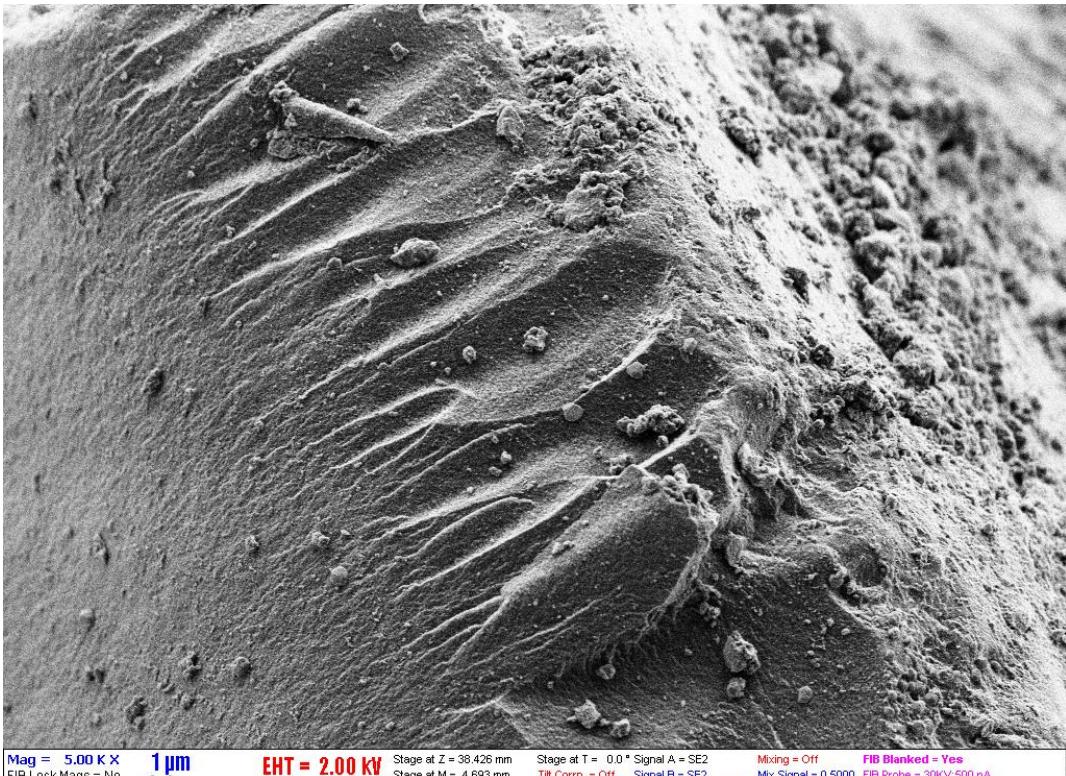
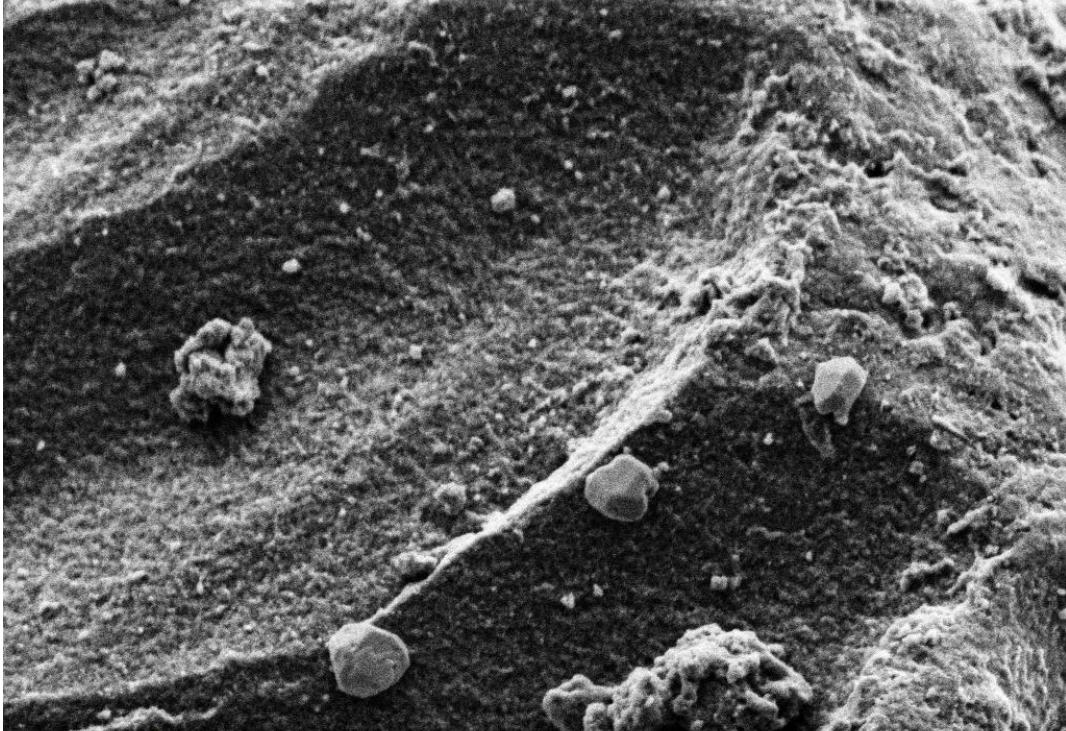


Figure S3 IM-BF4-0.3

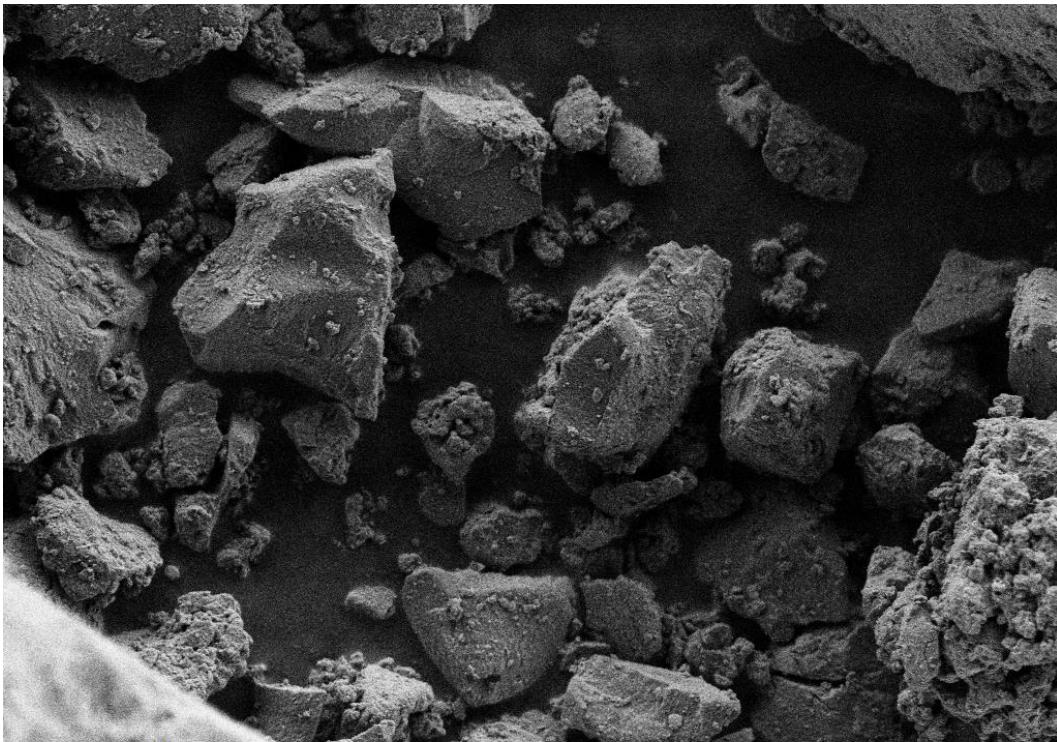




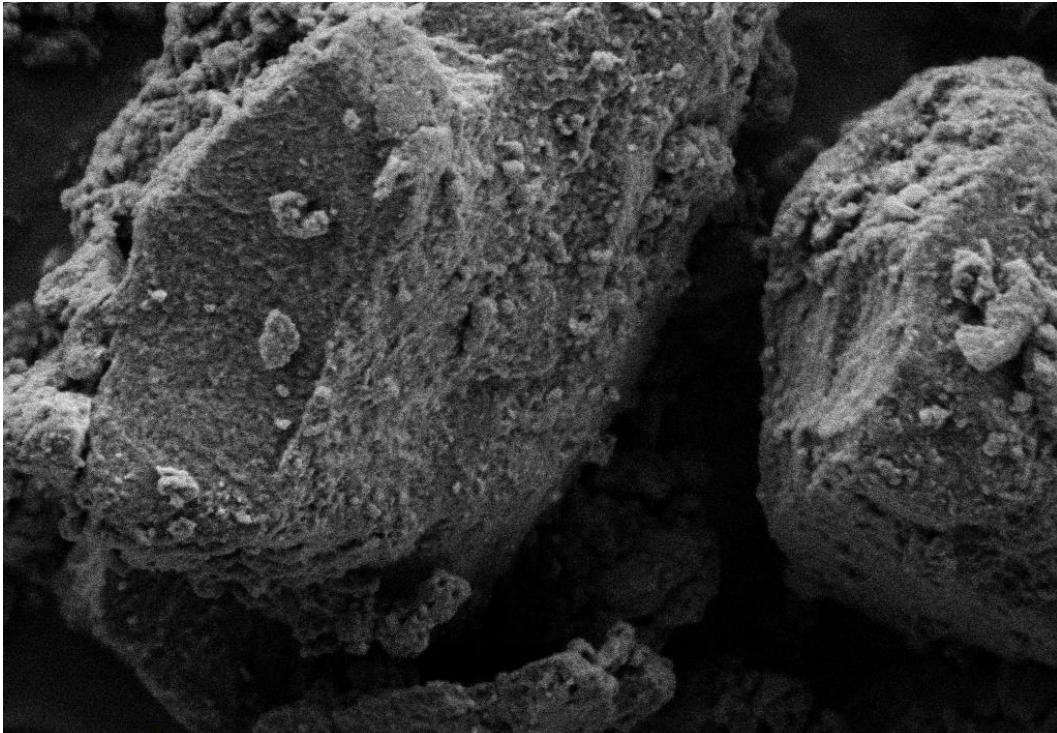
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FIB Lock Mags = No      Stage at M = 4.693 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30KV:500 pA  
FIB Mag = 706 X      WD = 3.6 mm      Image Pixel Size = 58.79 nm      Tit Angle = 0.0 ° Scan Rotation = 0.0 °      Aperture No. = 1      FIB Imaging = SEM



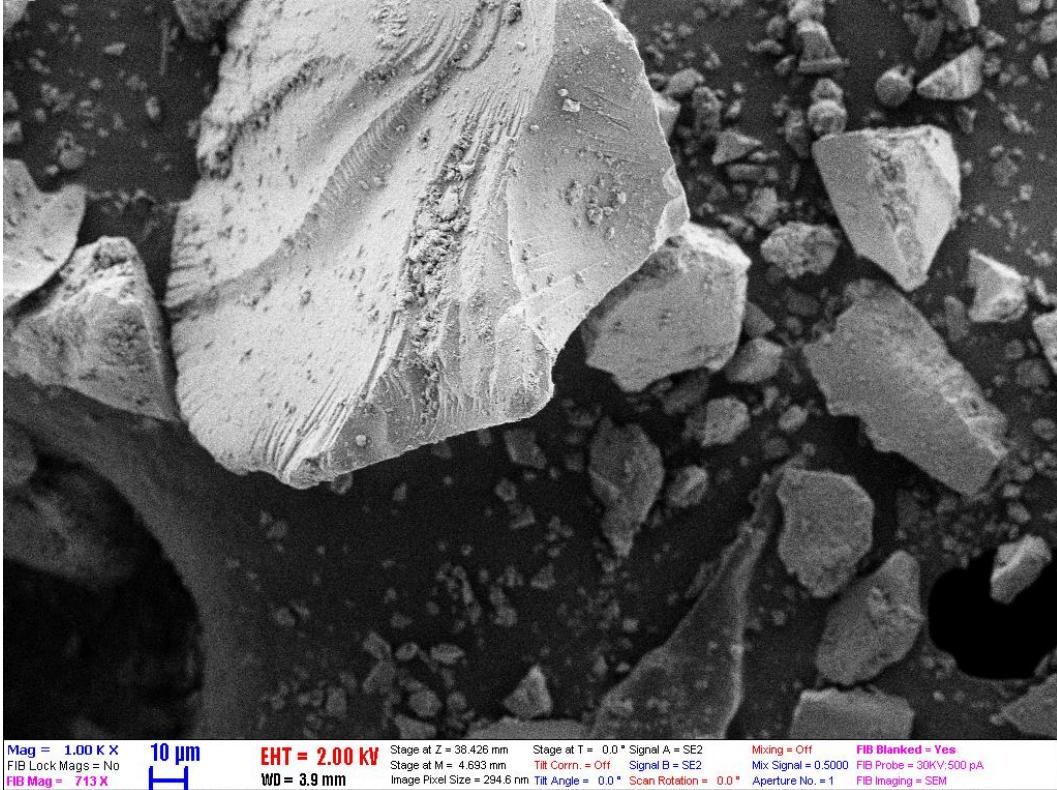
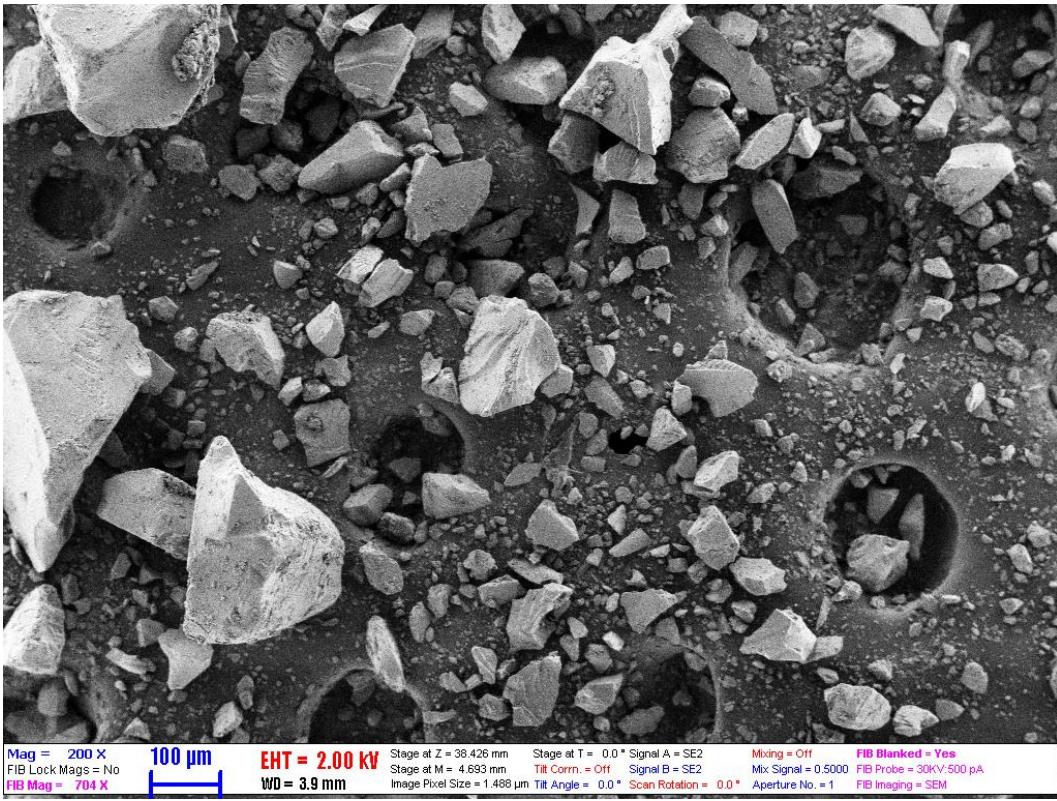
Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      Stage at M = 4.693 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30KV:500 pA  
FIB Mag = 704 X      WD = 3.6 mm      Image Pixel Size = 14.70 nm      Tit Angle = 0.0 ° Scan Rotation = 0.0 °      Aperture No. = 1      FIB Imaging = SEM

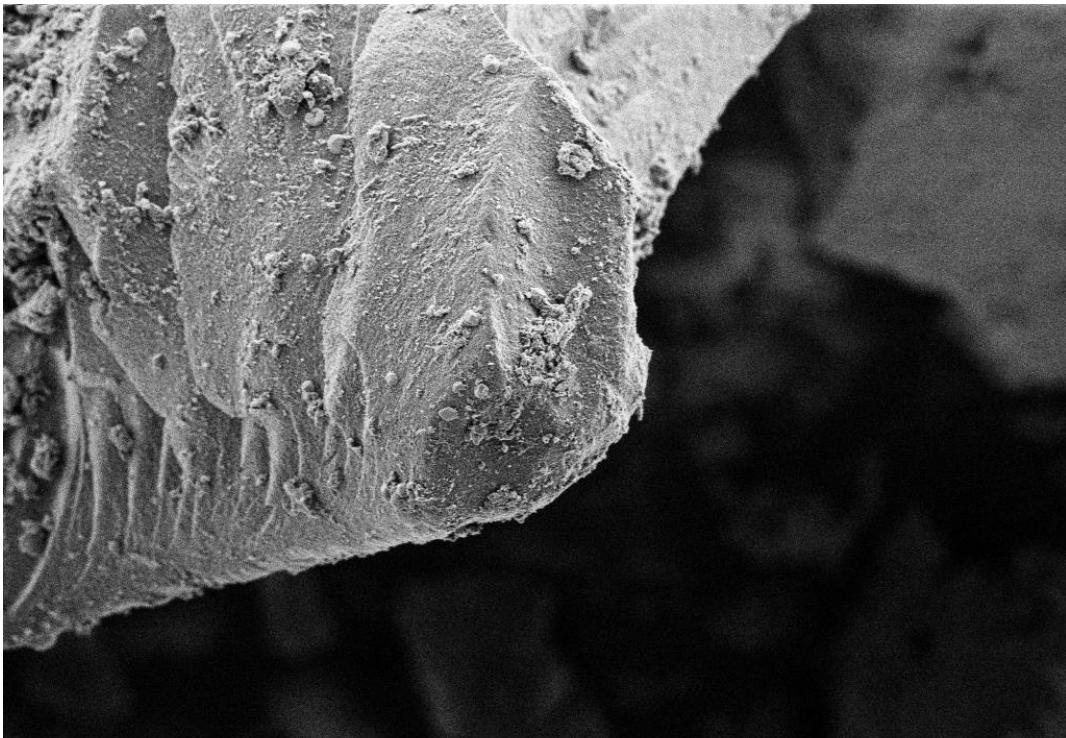


Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.0 mm      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
FIB Mag = 704 X      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mixing = Off      FIB Blanked = Yes  
                        Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Mix Signal = 0.5000  
                        Aperture No. = 1      FIB Probe = 30kV:500 pA  
                        FIB Imaging = SEM

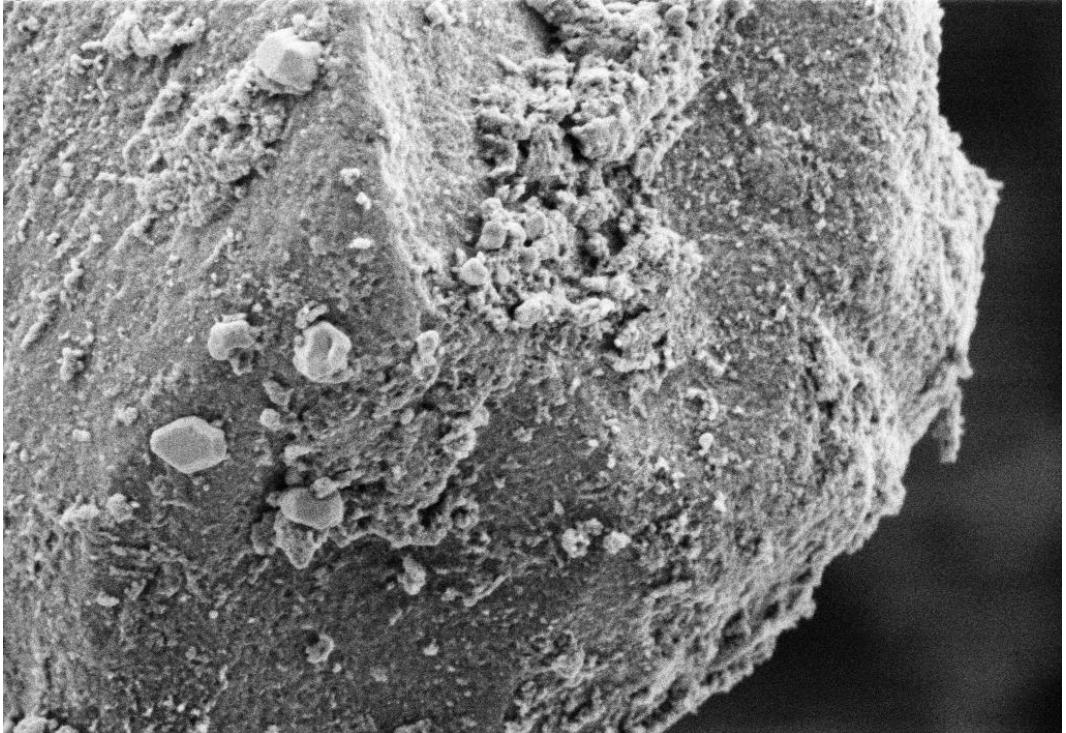


Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.0 mm      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
FIB Mag = 704 X      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mixing = Off      FIB Blanked = Yes  
                        Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Mix Signal = 0.5000  
                        Aperture No. = 1      FIB Probe = 30kV:500 pA  
                        FIB Imaging = SEM

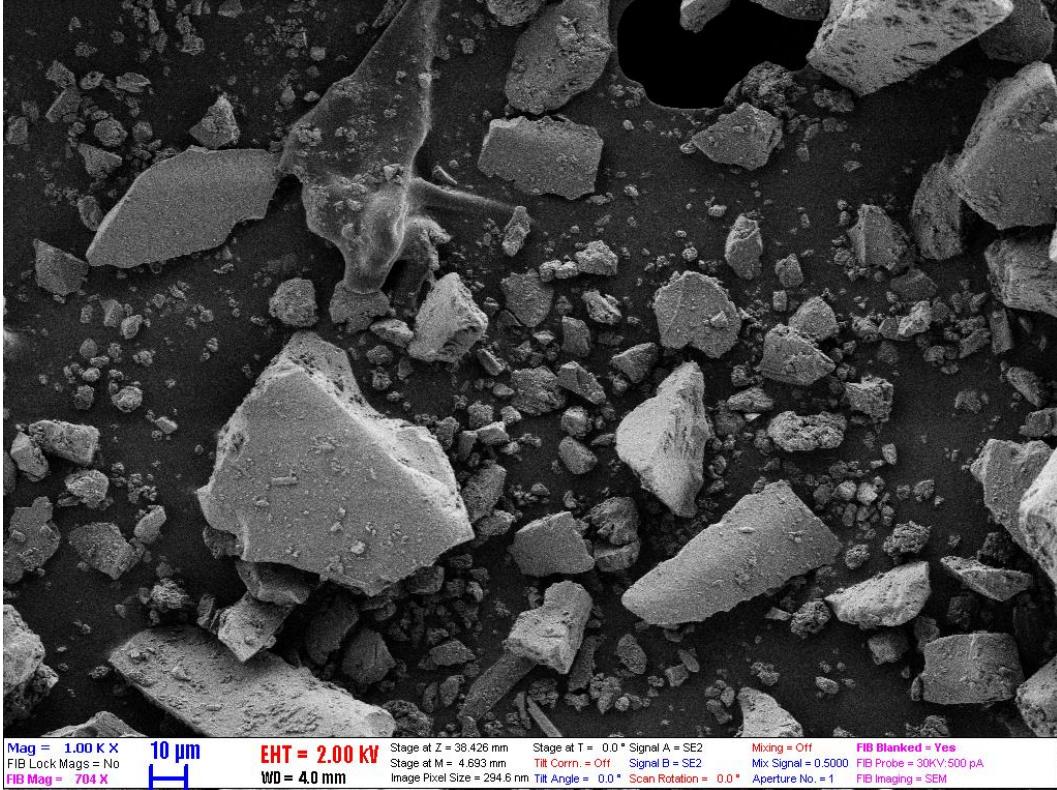
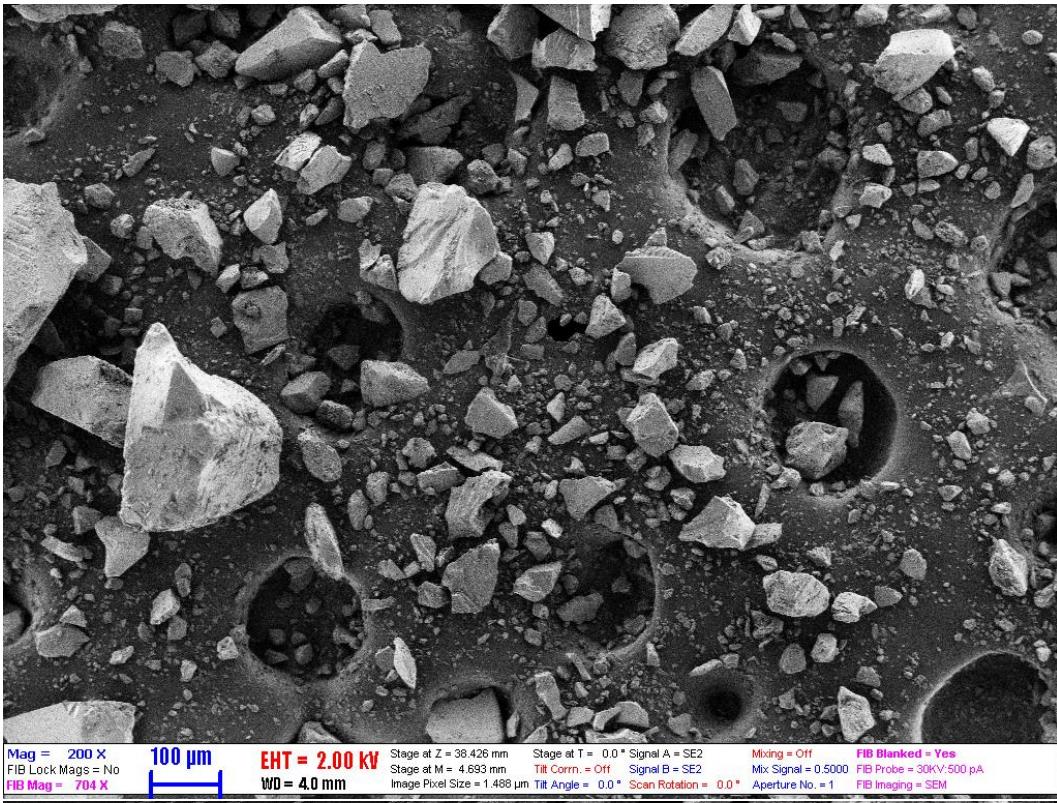


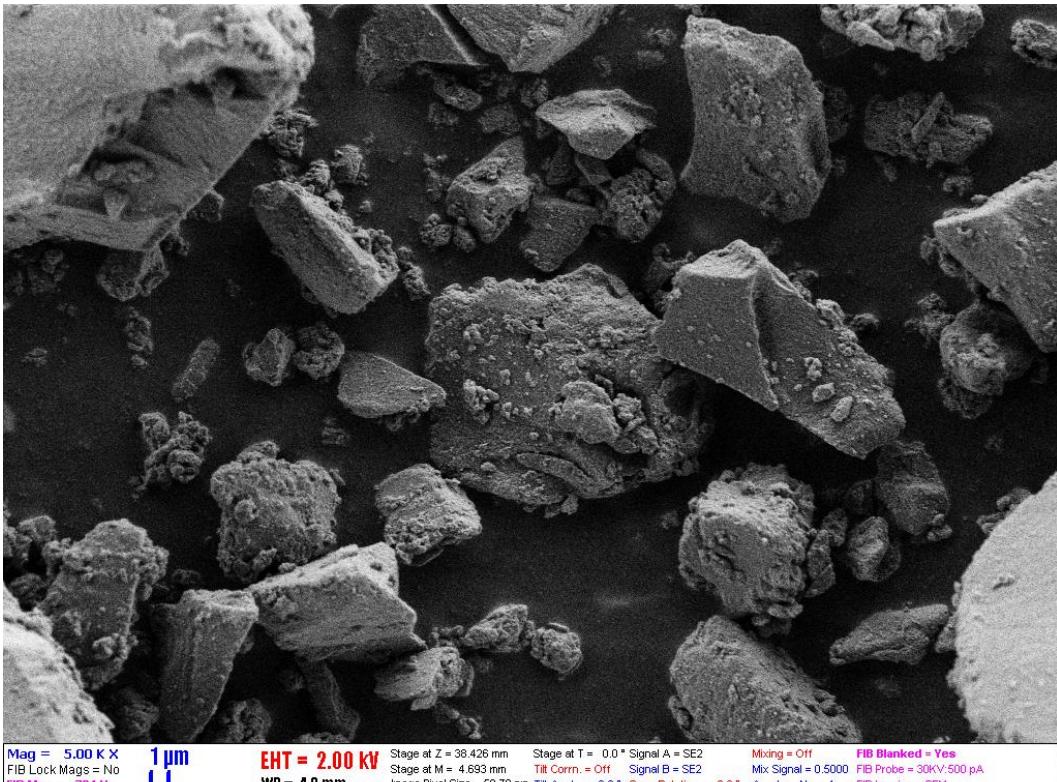


Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      Stage at M = 4.693 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      WD = 3.9 mm      Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



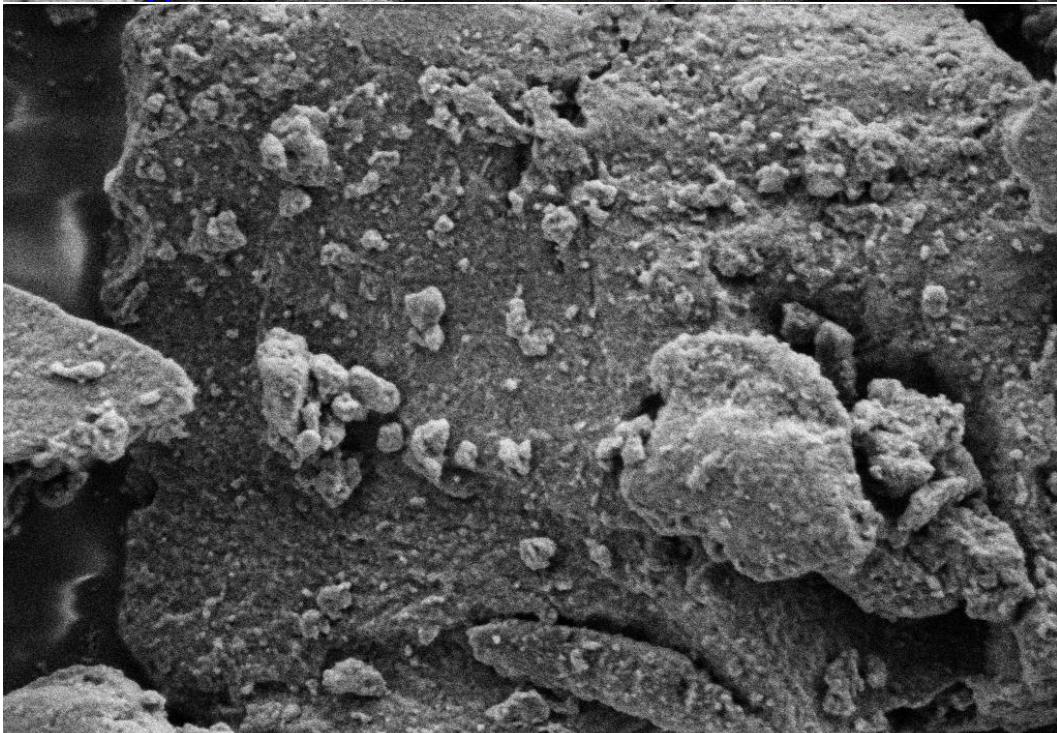
Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      Stage at M = 4.693 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      WD = 3.9 mm      Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM





Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.0 mm  
FIB Mag = 704 X

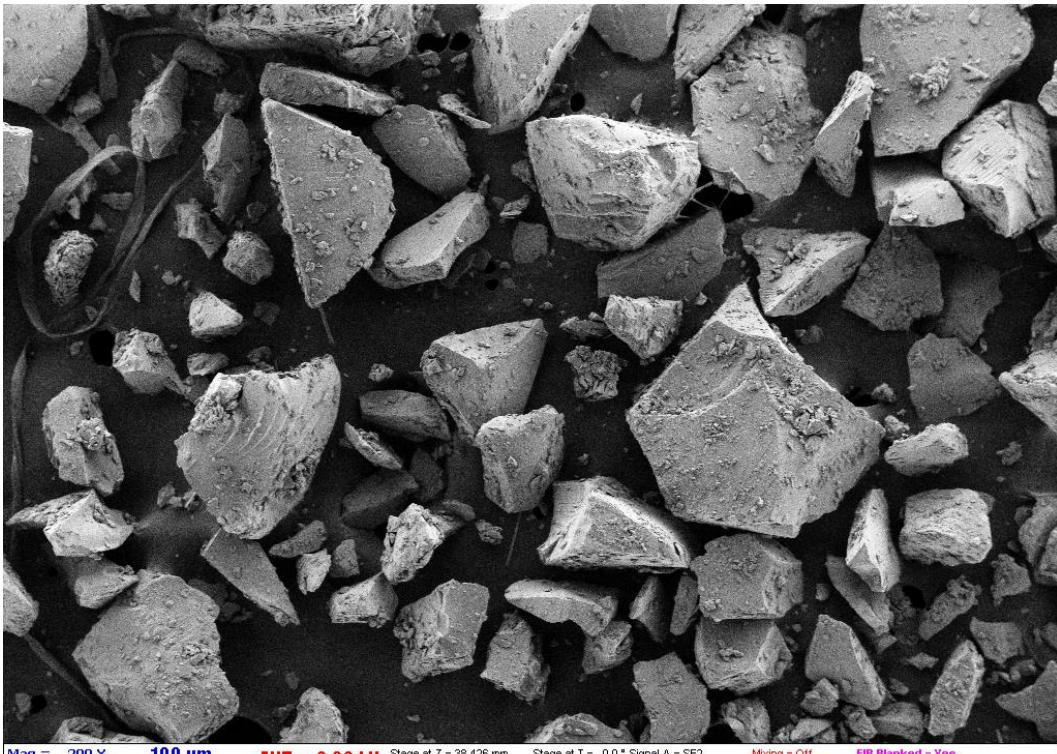
Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



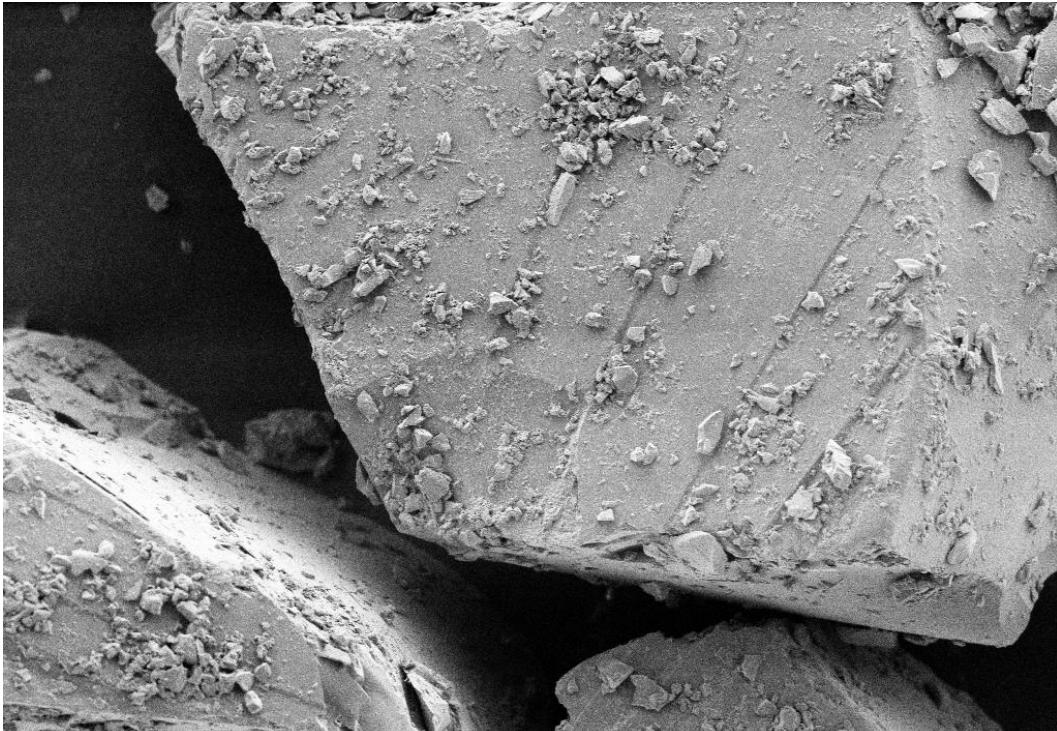
Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.0 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM

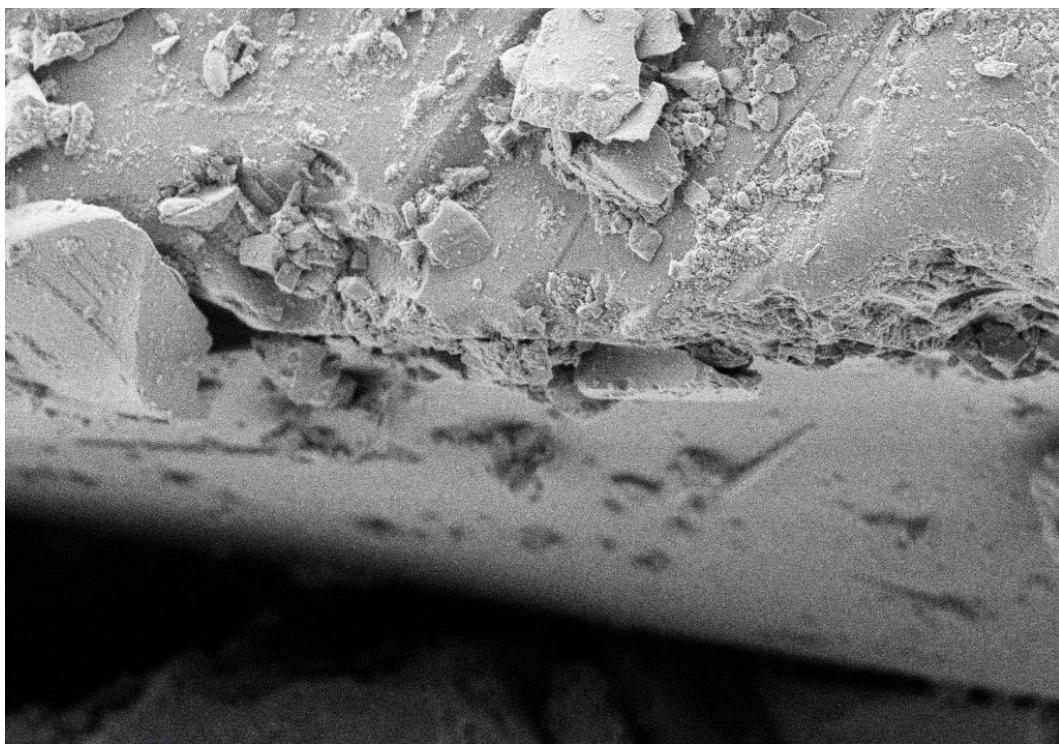
Figure S4 IM-BF4-0.5



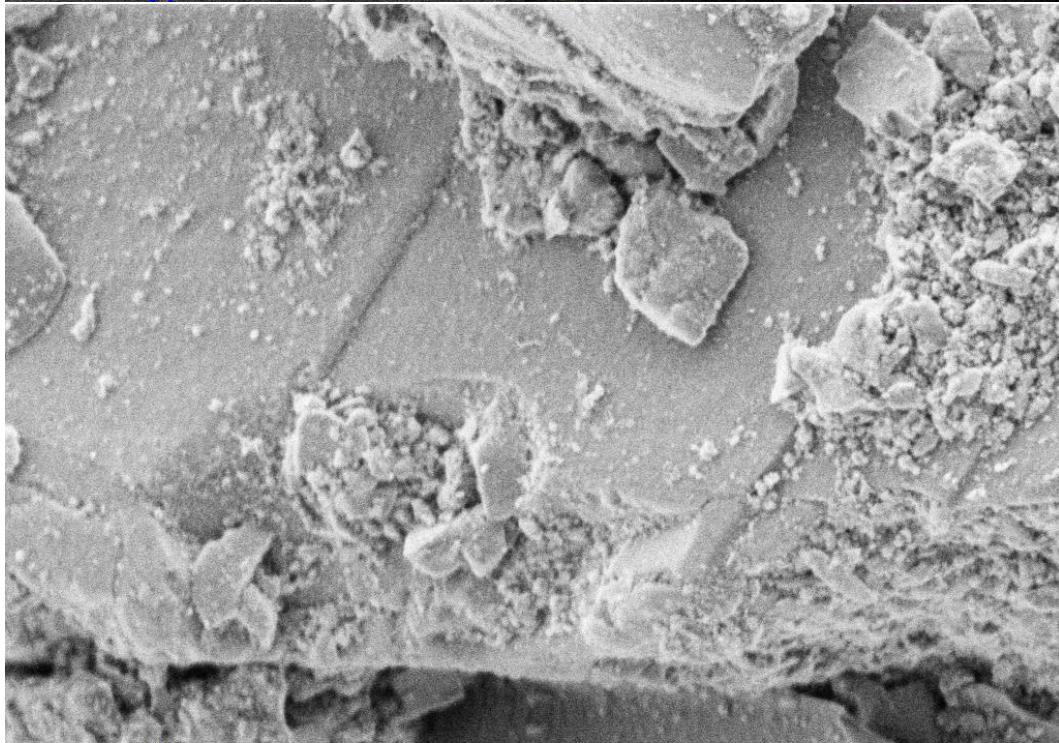
Mag = 200 X      100 µm      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
FIB Lock Mags = No      WD = 4.1 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mixing = Off  
FIB Mag = 722 X      Image Pixel Size = 1.488 µm      Tilt Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1      FIB Blanked = Yes  
FIB Probe = 30kV:500 pA      Mix Signal = 0.5000      FIB Imaging = SEM



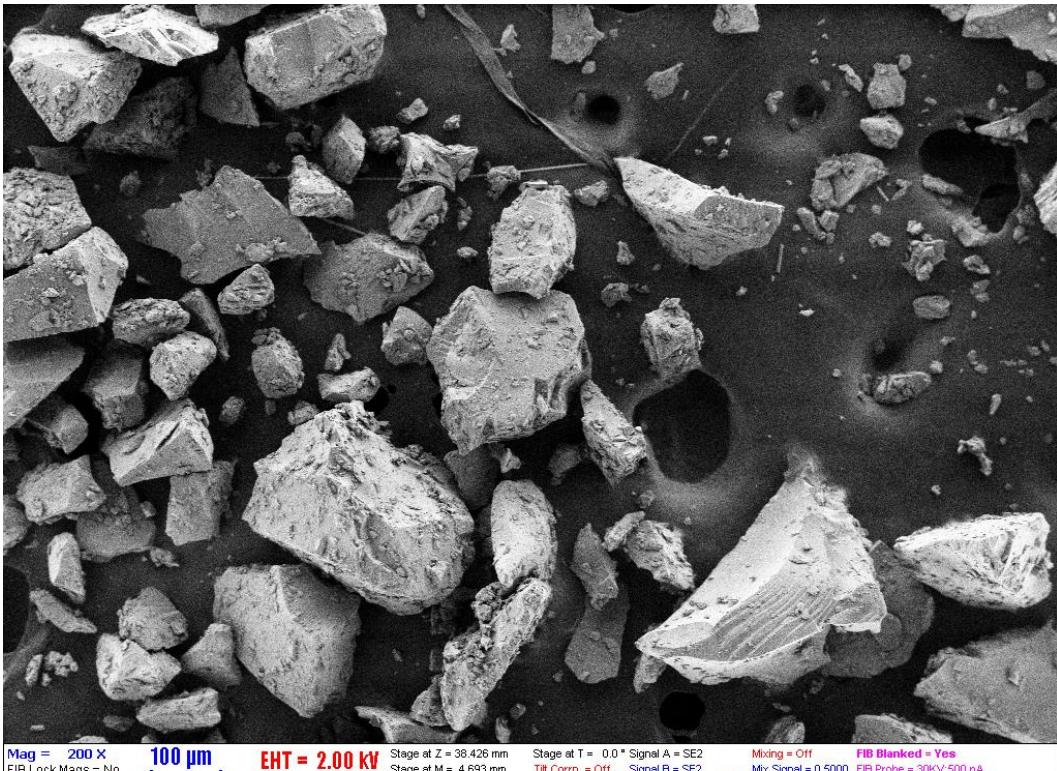
Mag = 1.00 K X      20 µm      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
FIB Lock Mags = No      WD = 4.1 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mixing = Off  
FIB Mag = 722 X      Image Pixel Size = 294.6 nm      Tilt Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1      FIB Blanked = Yes  
FIB Probe = 30kV:500 pA      Mix Signal = 0.5000      FIB Imaging = SEM



**EHT = 2.00 kV**  
**WD = 4.1 mm**

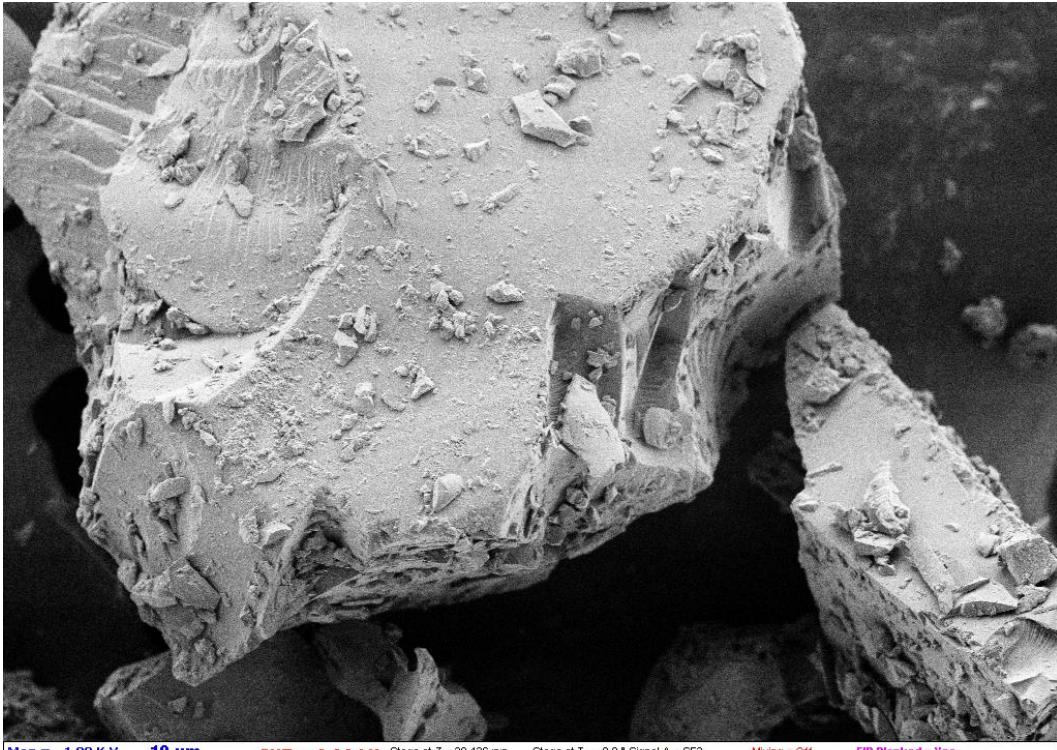


**EHT = 2.00 kV**  
**WD = 4.1 mm**



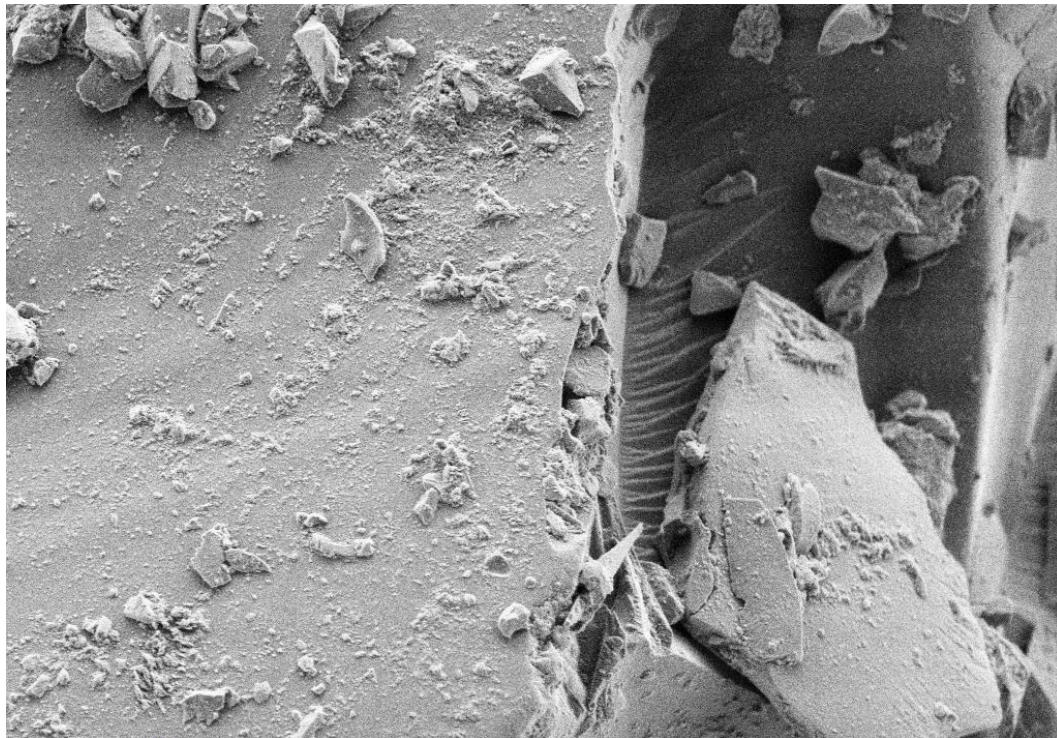
Mag = 200 X      100  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.1 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 1.488  $\mu$ m      Til Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1      FIB Imaging = SEM

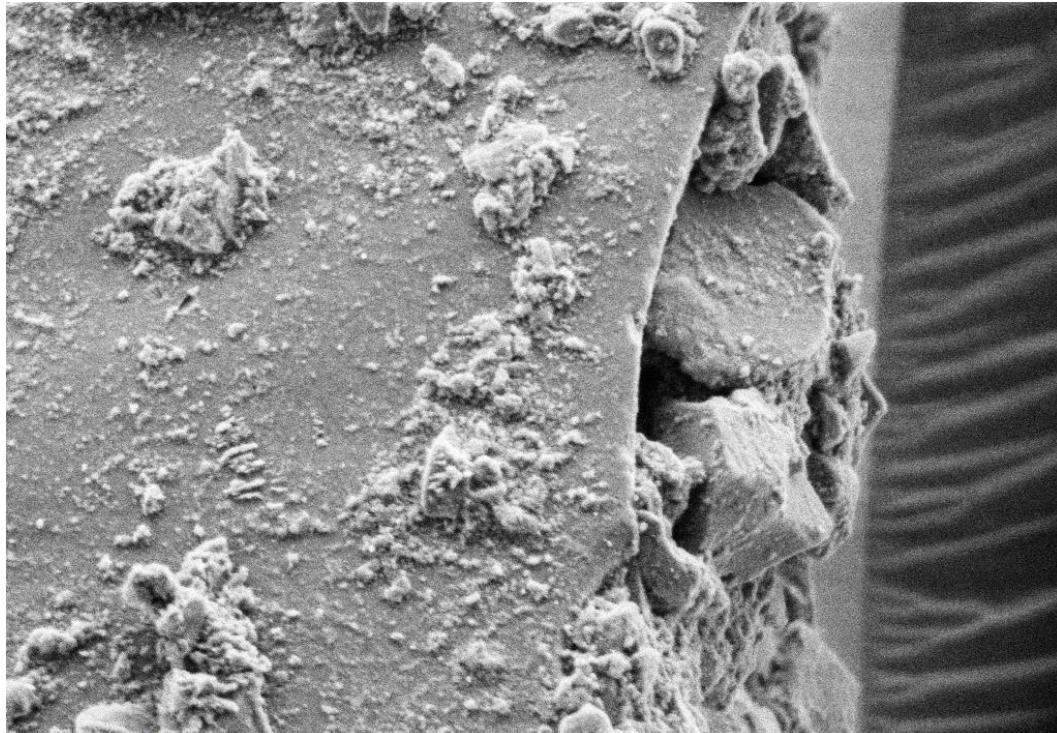


Mag = 1.00 K X      10  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.1 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 294.6 nm      Til Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1      FIB Imaging = SEM



Mag = 5.00 K X EHT = 2.00 kV Stage at Z = 38.426 mm Stage at T = 0.0 ° Signal A = SE2 Mixing = Off FIB Blanked = Yes  
FIB Lock Mags = No Stage at M = 4.593 mm Til Corr. = Off Signal B = SE2 Mix Signal = 0.5000 FIB Probe = 30kV:500 pA  
FIB Mag = 704 X WD = 4.1 mm Image Pixel Size = 58.79 nm Tit Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1 FIB Imaging = SEM



Mag = 20.00 K X EHT = 2.00 kV Stage at Z = 38.426 mm Stage at T = 0.0 ° Signal A = SE2 Mixing = Off FIB Blanked = Yes  
FIB Lock Mags = No Stage at M = 4.593 mm Til Corr. = Off Signal B = SE2 Mix Signal = 0.5000 FIB Probe = 30kV:500 pA  
FIB Mag = 704 X WD = 4.1 mm Image Pixel Size = 14.70 nm Tit Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1 FIB Imaging = SEM

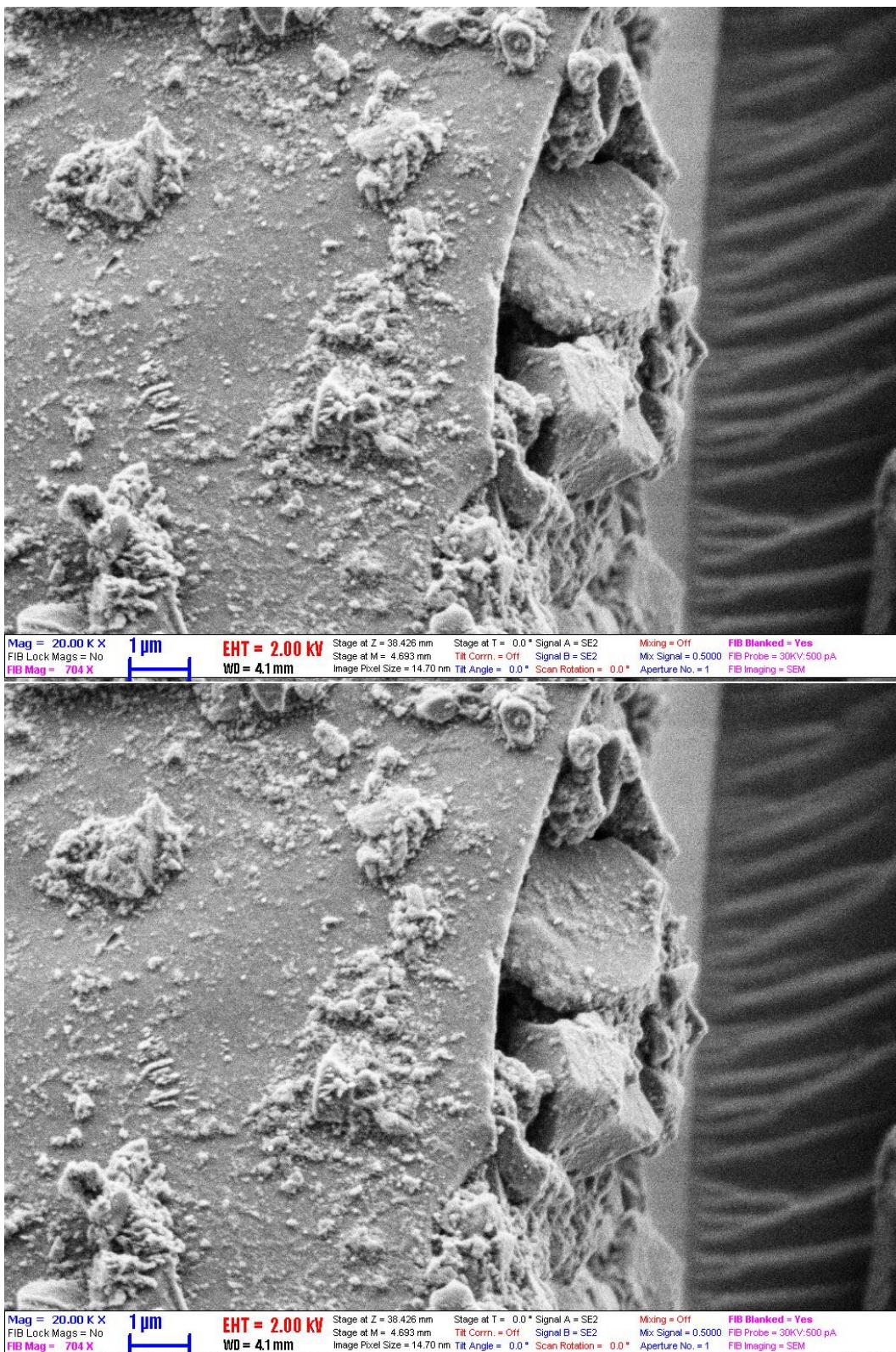
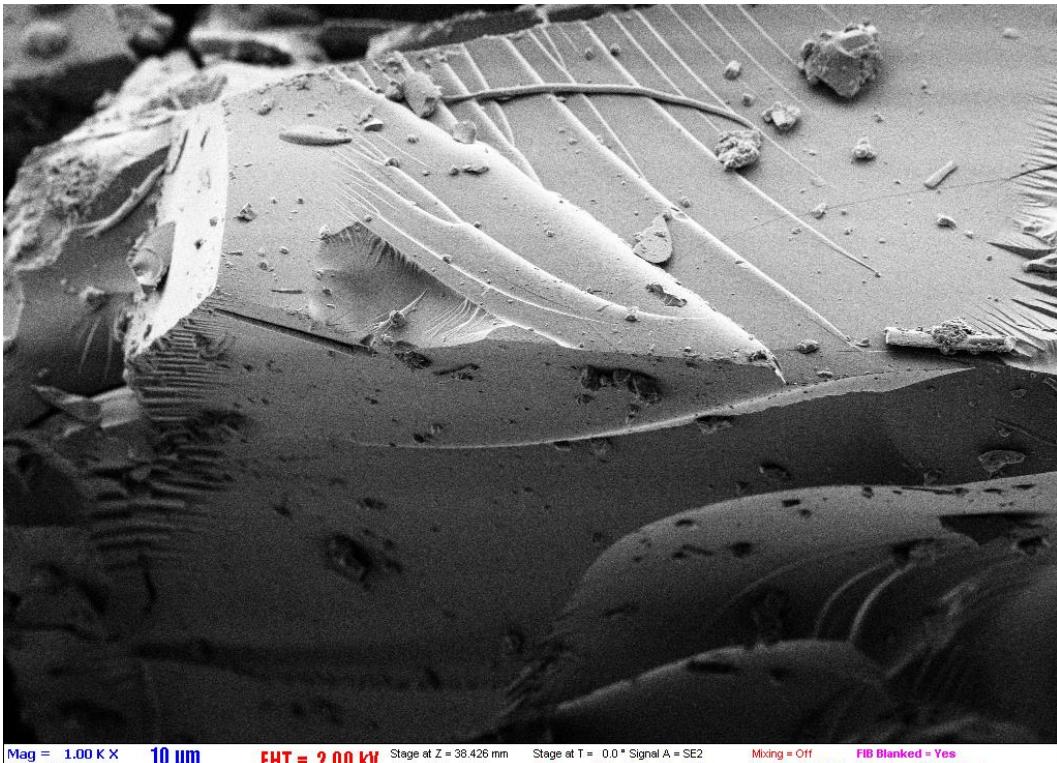
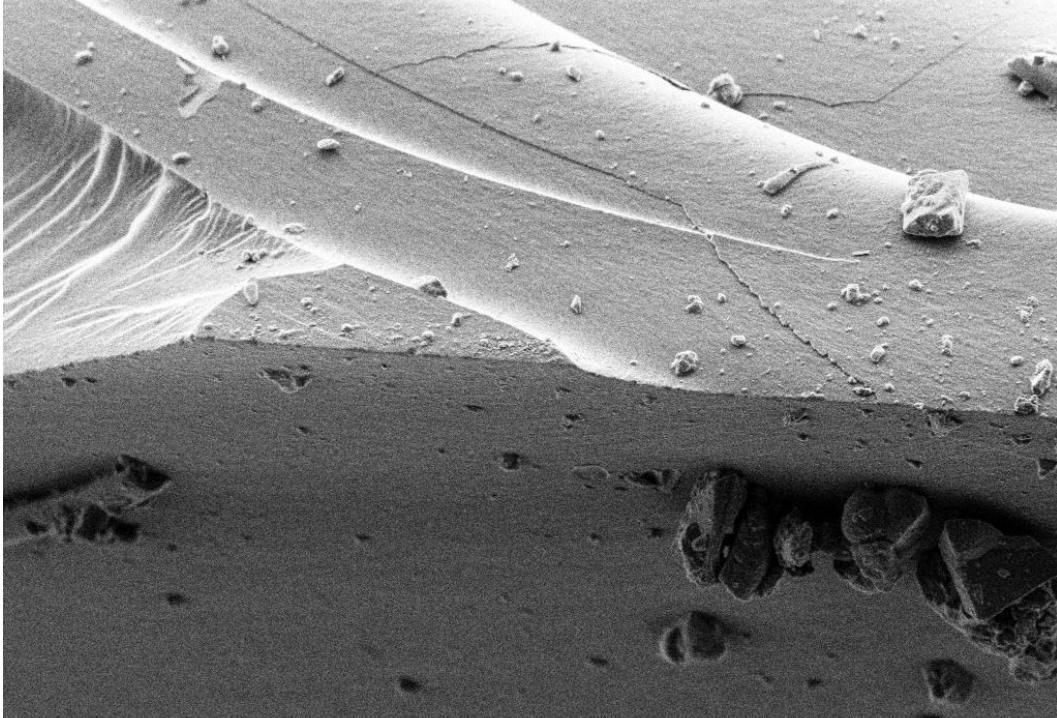


Figure S5 IM-CI-0.1



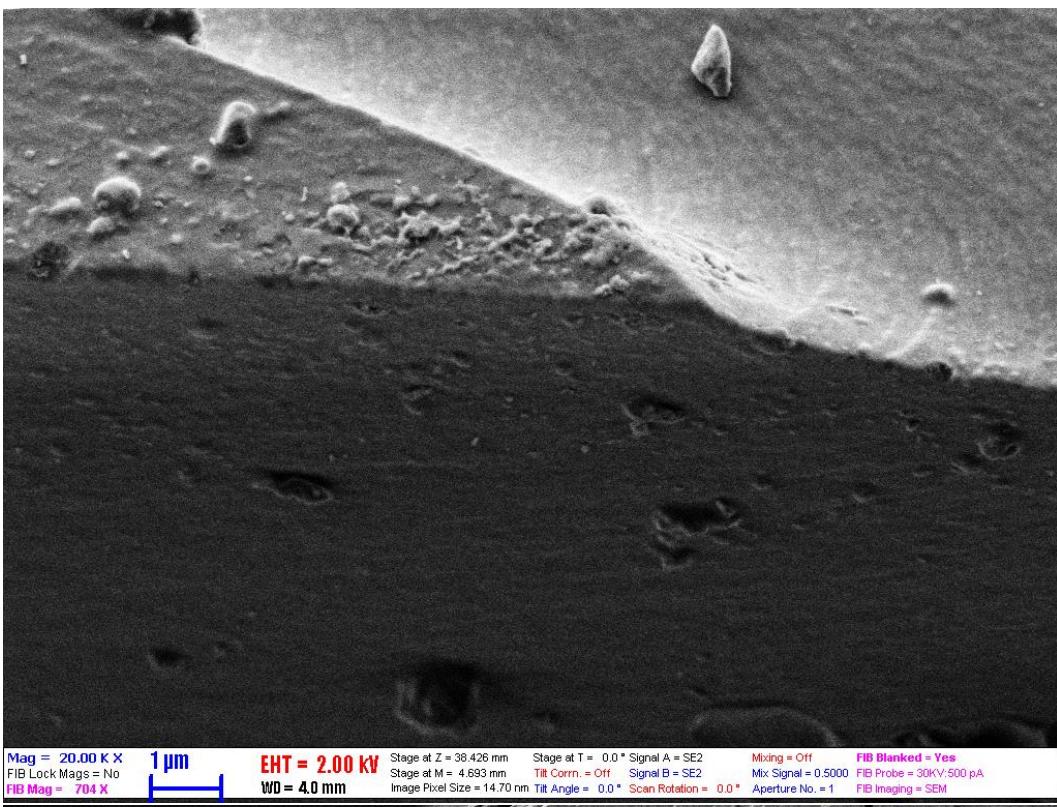
Mag = 1.00 K X      10  $\mu$ m  
FIB Lock Mags = No  
FIB Mag = 704 X

EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
WD = 4.0 mm      Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2  
Image Pixel Size = 294.6 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Mixing = Off  
Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Aperture No. = 1      FIB Imaging = SEM

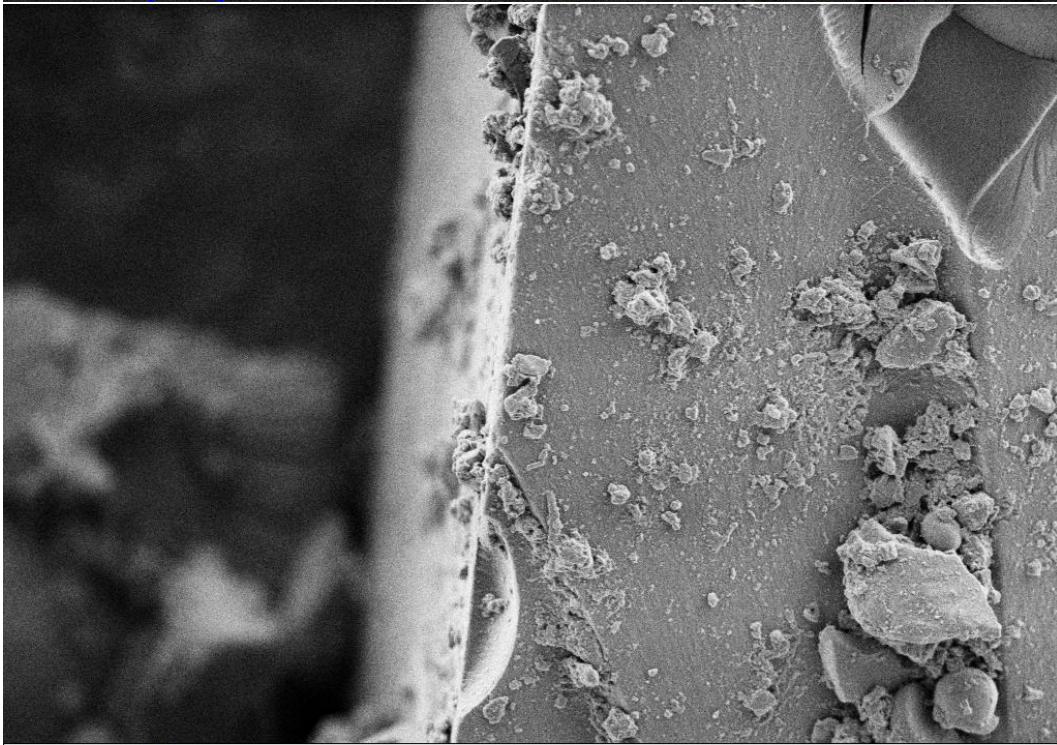


Mag = 5.00 K X      2  $\mu$ m  
FIB Lock Mags = No  
FIB Mag = 704 X

EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2  
WD = 4.0 mm      Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2  
Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Mixing = Off  
Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Aperture No. = 1      FIB Imaging = SEM



Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.0 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.2 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM

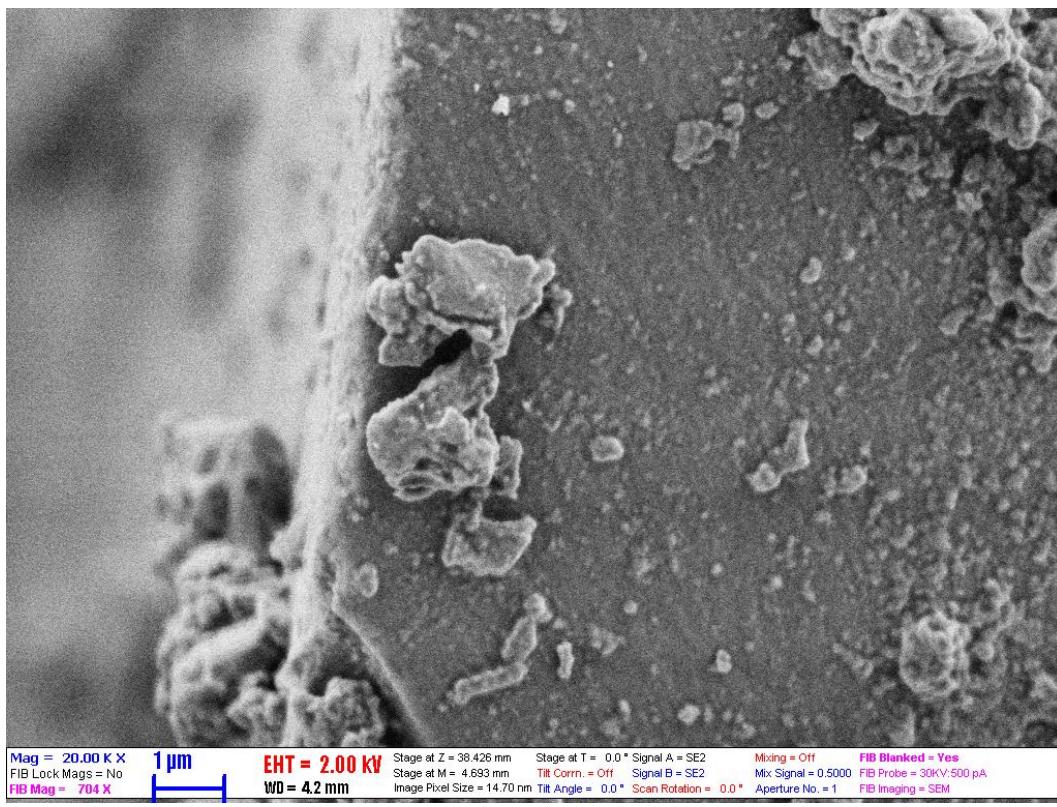
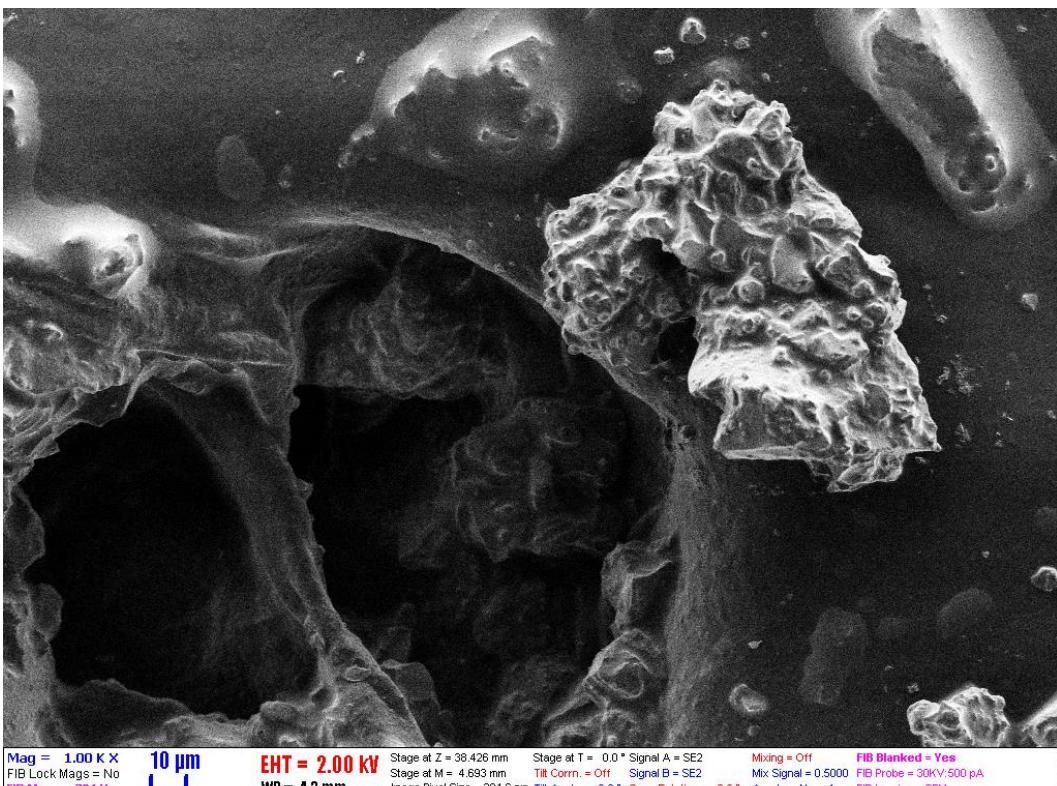


Figure S6 IM-CI-0.3

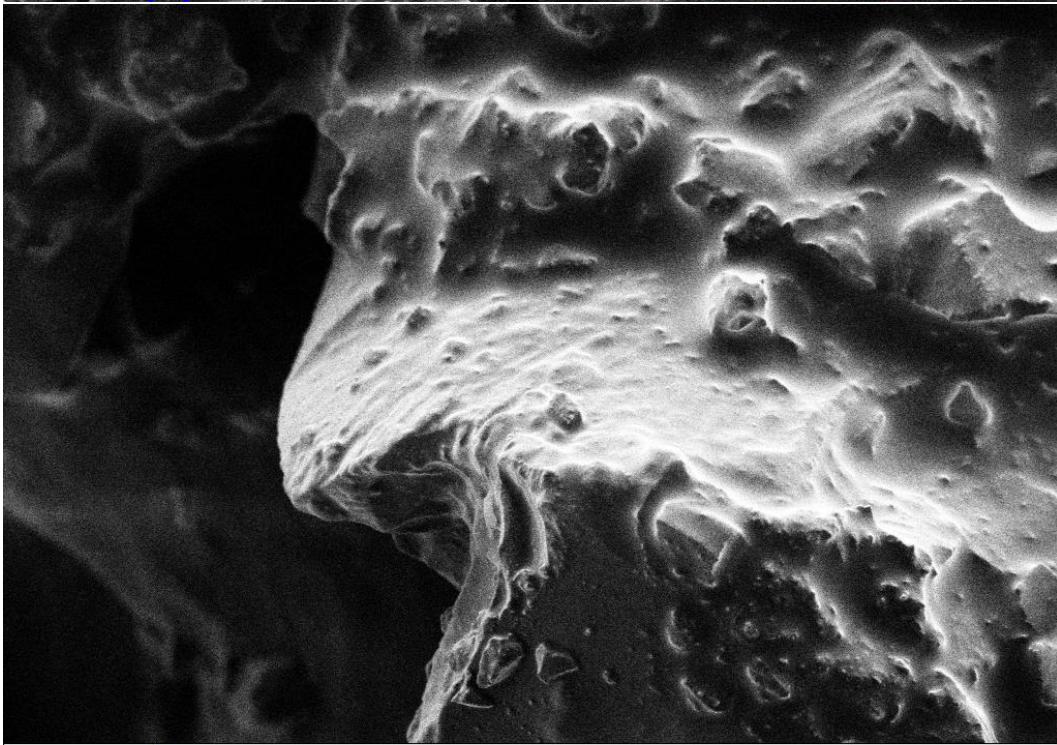


Mag = 1.00 K X  
FIB Lock Mags = No  
FIB Mag = 704 X

10 µm

EHT = 2.00 kV  
WD = 4.2 mm

Stage at Z = 38.426 mm Stage at T = 0.0 \* Signal A = SE2 Mixing = Off  
Stage at M = 4.593 mm Tilt Corr. = Off Signal B = SE2 Mix Signal = 0.5000  
Image Pixel Size = 294.6 nm Tilt Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1  
FIB Blanked = Yes FIB Probe = 30kV:500 pA  
FIB Imaging = SEM

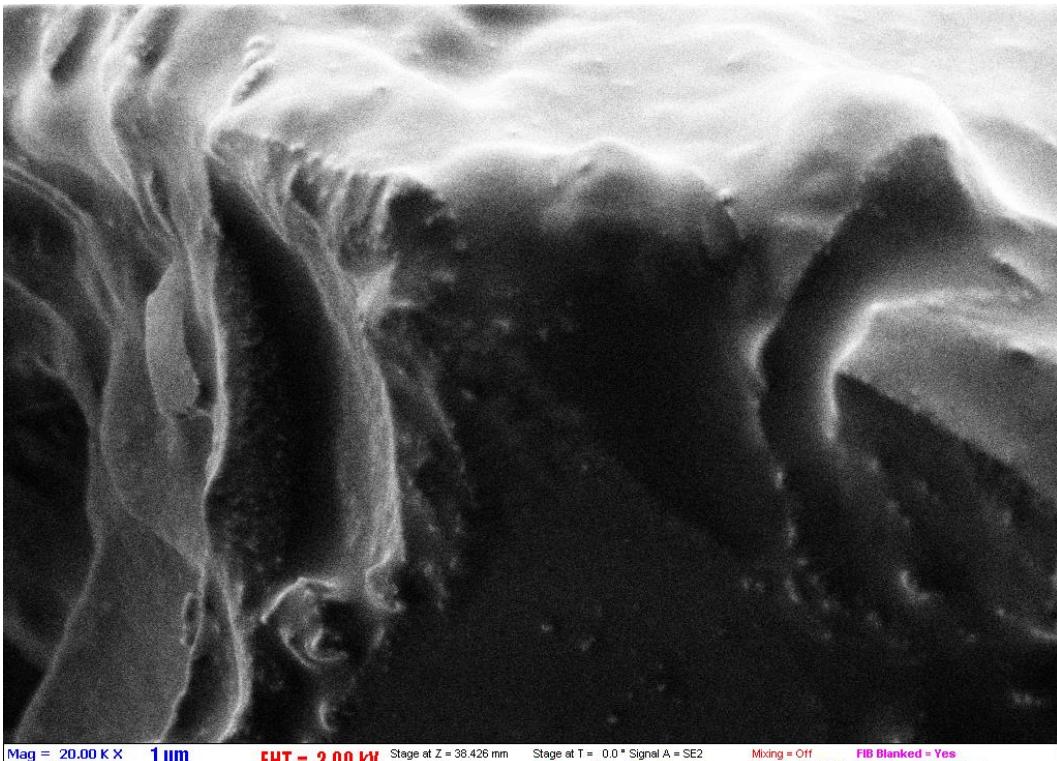


Mag = 5.00 K X  
FIB Lock Mags = No  
FIB Mag = 704 X

1 µm

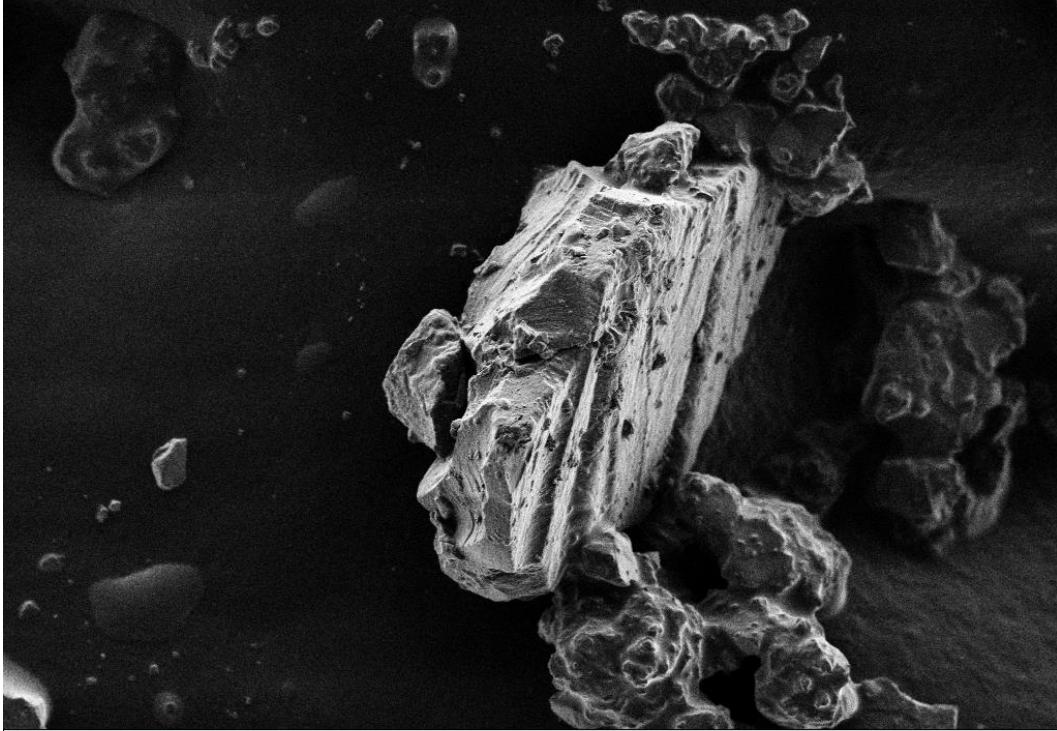
EHT = 2.00 kV  
WD = 4.1 mm

Stage at Z = 38.426 mm Stage at T = 0.0 \* Signal A = SE2 Mixing = Off  
Stage at M = 4.593 mm Tilt Corr. = Off Signal B = SE2 Mix Signal = 0.5000  
Image Pixel Size = 58.79 nm Tilt Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1  
FIB Blanked = Yes FIB Probe = 30kV:500 pA  
FIB Imaging = SEM



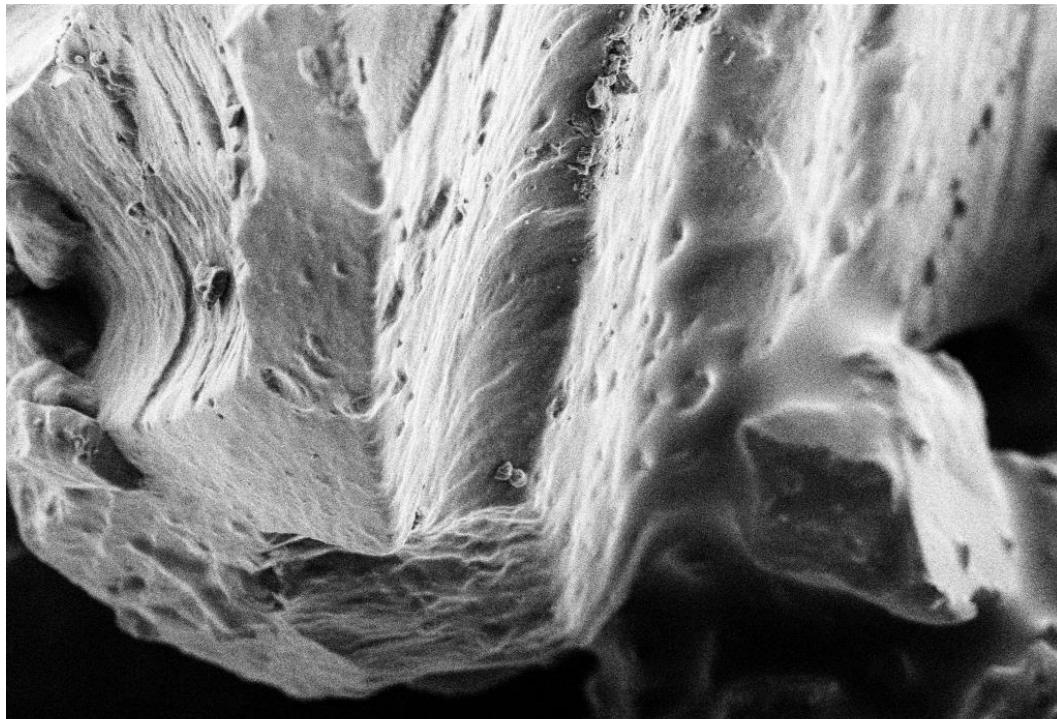
Mag = 20.00 K X      1 µm      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.1 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM

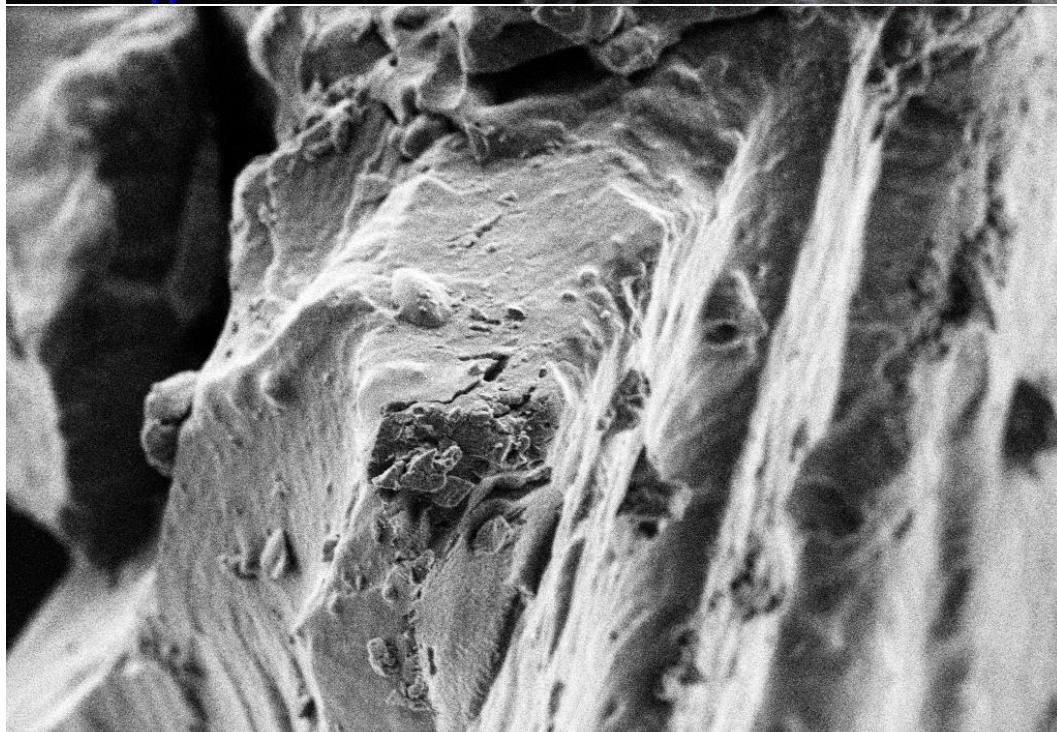


Mag = 1.00 K X      10 µm      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.2 mm  
FIB Mag = 704 X

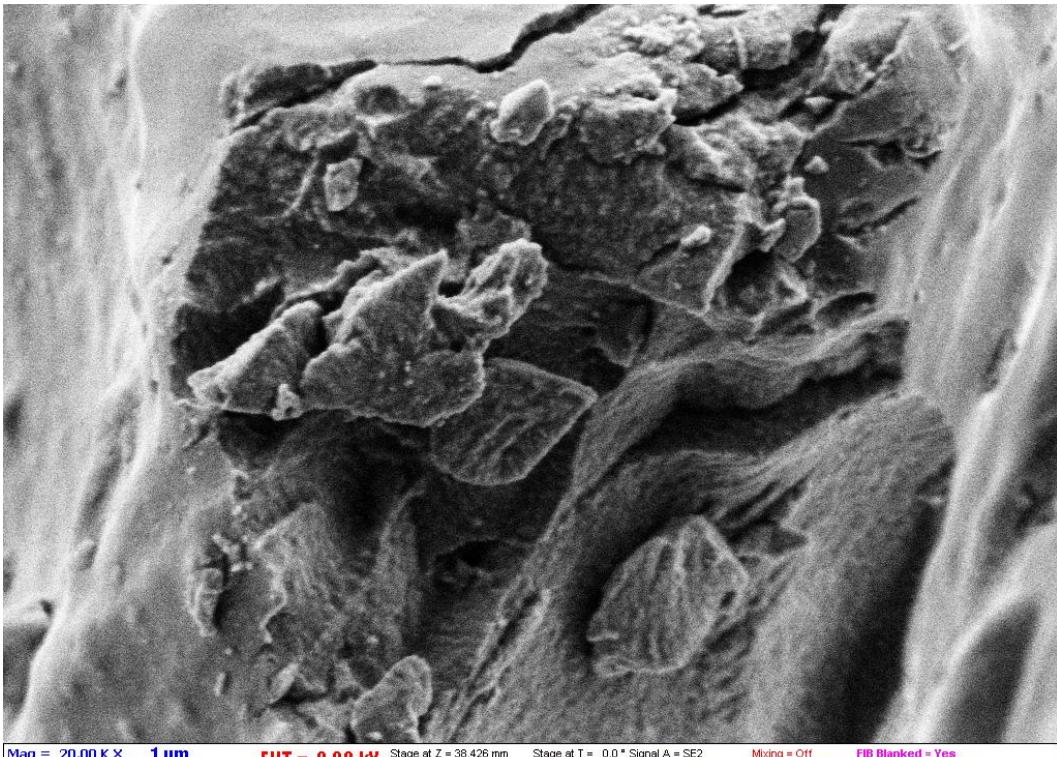
Stage at Z = 38.426 mm      Stage at T = 0.0 ° Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 294.6 nm      Tilt Angle = 0.0 ° Scan Rotation = 0.0 ° Aperture No. = 1      FIB Imaging = SEM



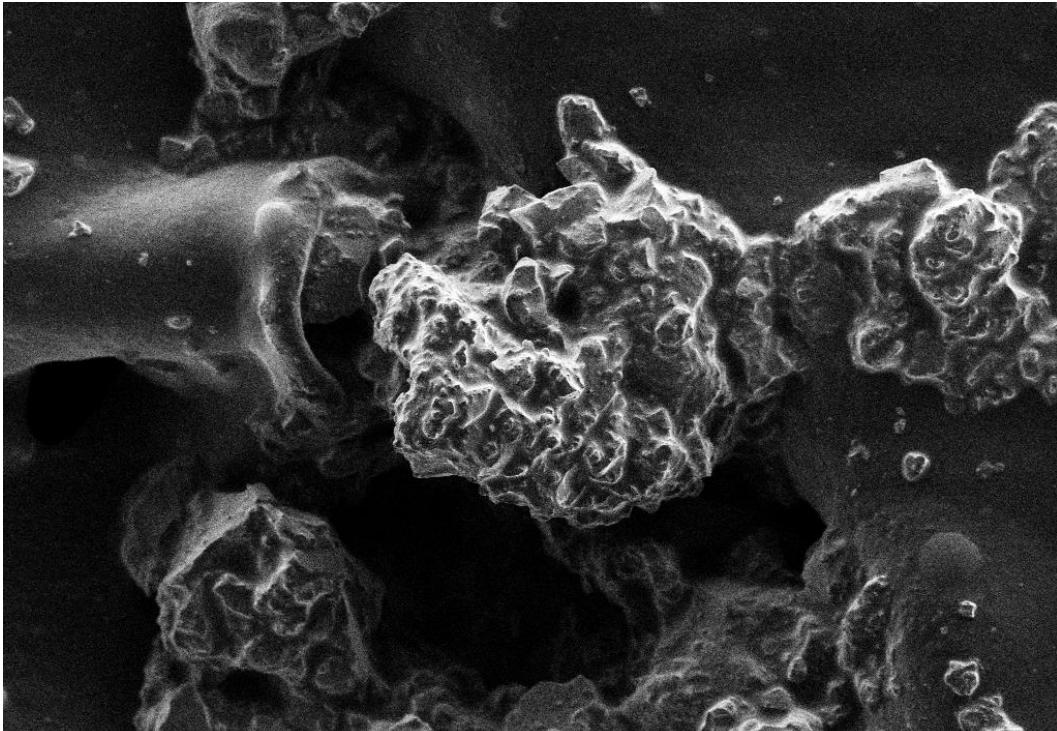
Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      FIB Mag = 704 X      WD = 4.2 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



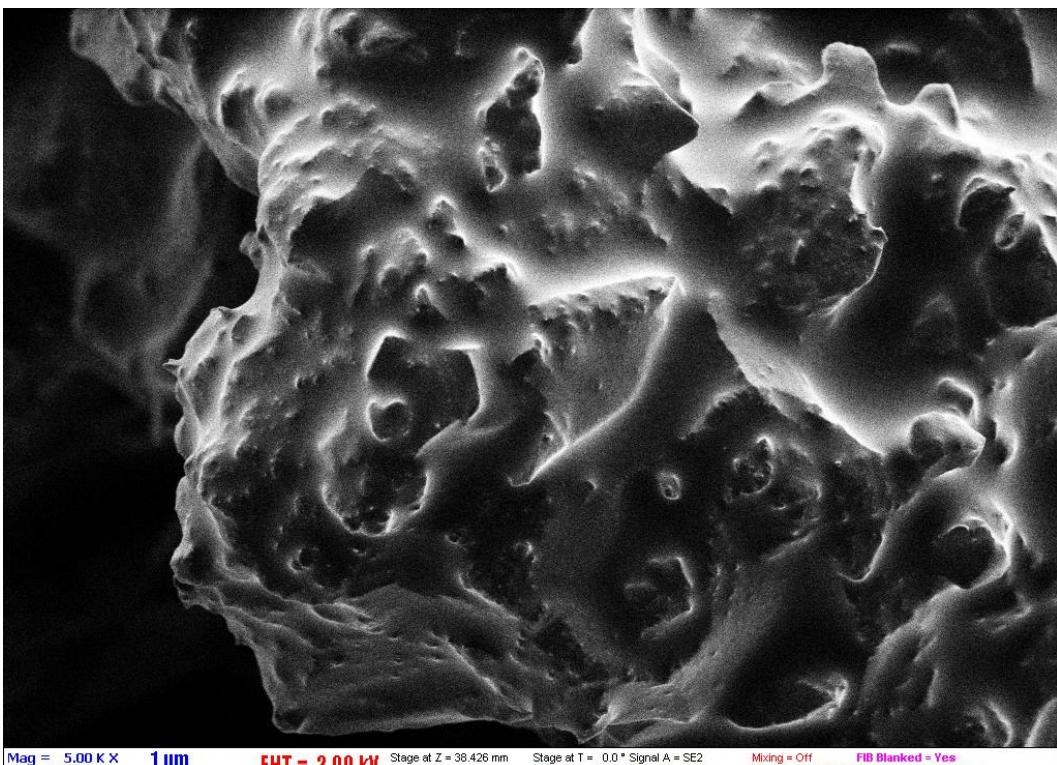
Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      FIB Mag = 704 X      WD = 4.2 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 58.79 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.2 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 14.70 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM

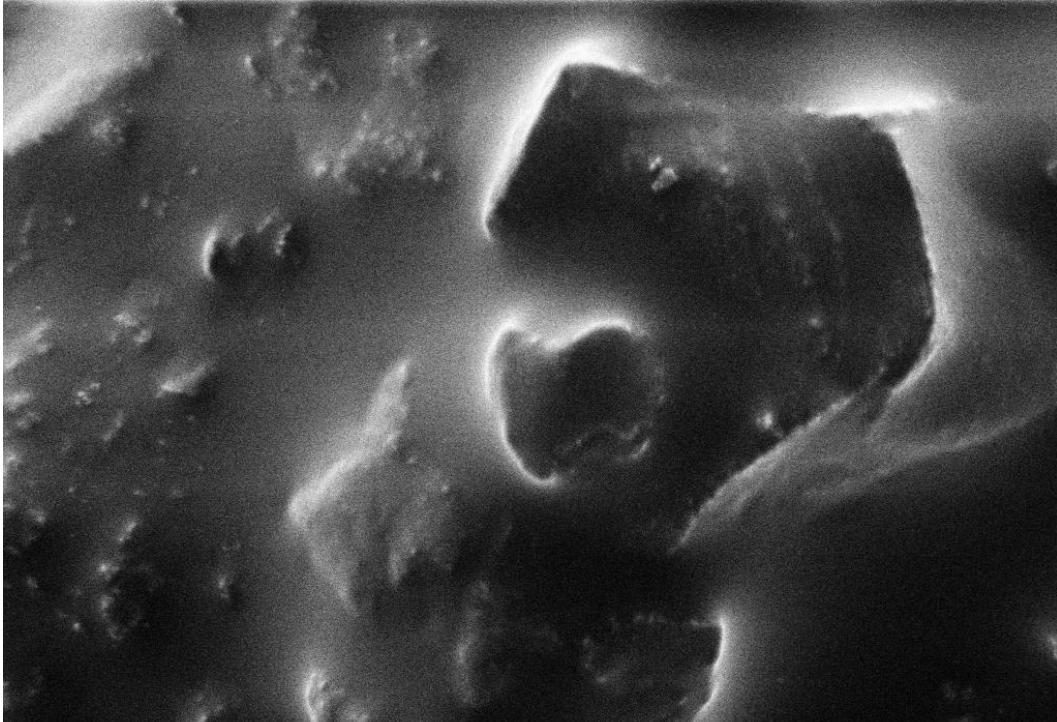


Mag = 1.00 K X      10  $\mu$ m      EHT = 2.00 kV      Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
FIB Lock Mags = No      WD = 4.2 mm      Stage at M = 4.593 mm      Tilt Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
FIB Mag = 704 X      Image Pixel Size = 294.6 nm      Tilt Angle = 0.0 \*      Scan Rotation = 0.0 \*      Aperture No. = 1      FIB Imaging = SEM



Mag = 5.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.2 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 58.79 nm      Til Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1      FIB Imaging = SEM



Mag = 20.00 K X      1  $\mu$ m      EHT = 2.00 kV  
FIB Lock Mags = No      WD = 4.2 mm  
FIB Mag = 704 X

Stage at Z = 38.426 mm      Stage at T = 0.0 \* Signal A = SE2      Mixing = Off      FIB Blanked = Yes  
Stage at M = 4.593 mm      Til Corr. = Off      Signal B = SE2      Mix Signal = 0.5000      FIB Probe = 30kV:500 pA  
Image Pixel Size = 14.70 nm      Til Angle = 0.0 \* Scan Rotation = 0.0 \* Aperture No. = 1      FIB Imaging = SEM

Figure S7 IM-BF4-0.5

## 2. EDS spectra of the IL – silica nanocomposites

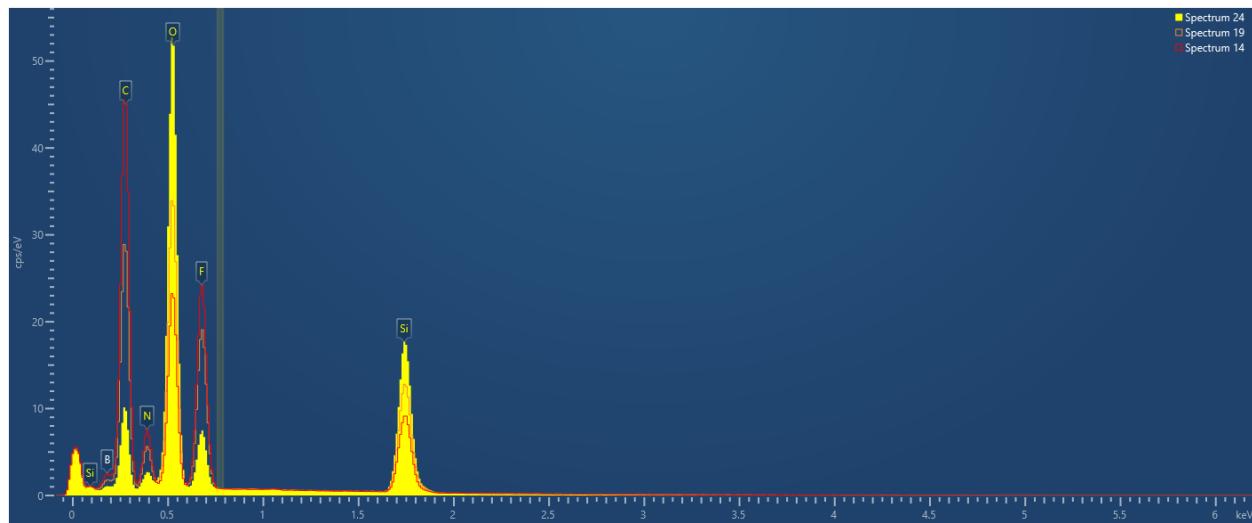


Figure S8 EDS spectra of samples **IM-BF4-0.1, IM-BF4-0.3, IM-BF4-0.5**.

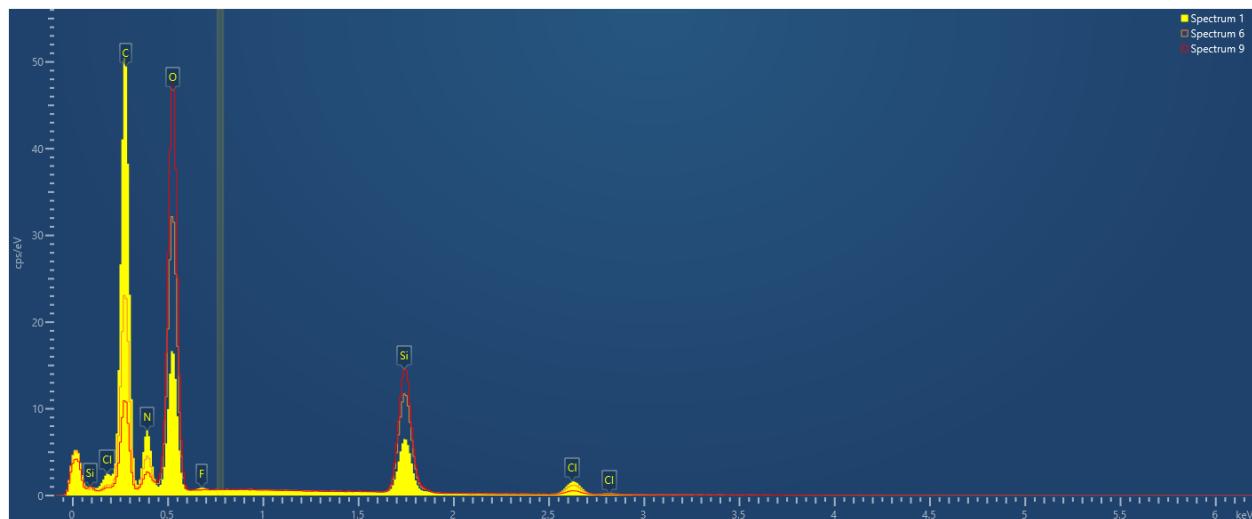


Figure S9 EDS spectra of samples **IM-Cl-0.1, IM-Cl-0.3, IM-Cl-0.5**.