

Per-file Report

File: Front_EE-1_3_3000x.bmp

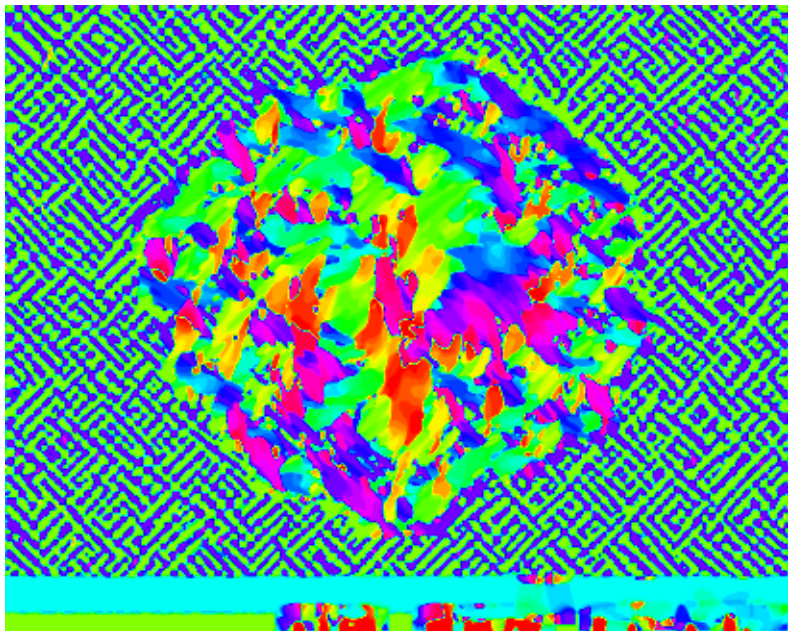
Pattern: Clockwise

n_vectors: 178 | cw_frac: 0.516 | acw_frac: 0.484 | div_frac: 1.000

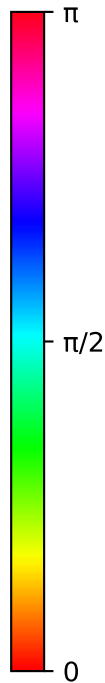
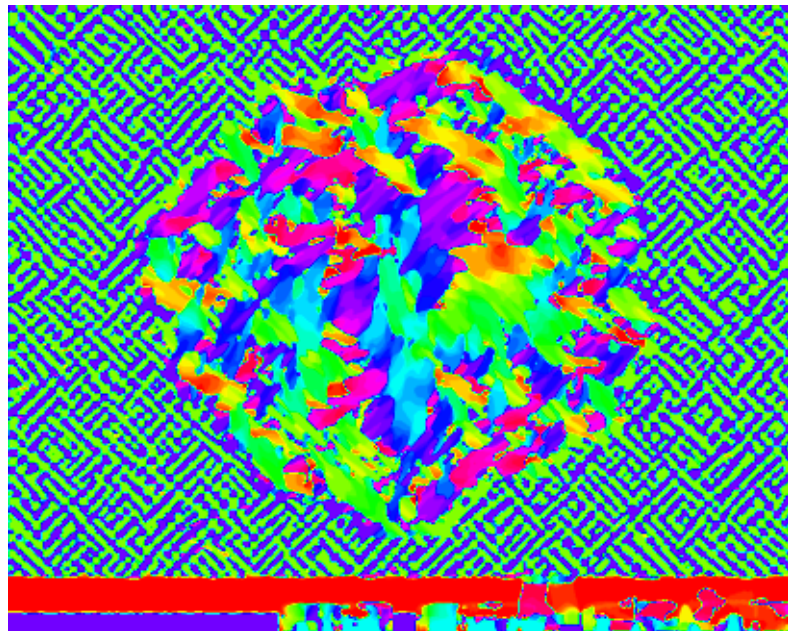
Rotation ($\phi_{\perp \rightarrow \text{horizontal}}$): -1.80° | Center=(631,453)

Gabor angle maps (original, not rotated)

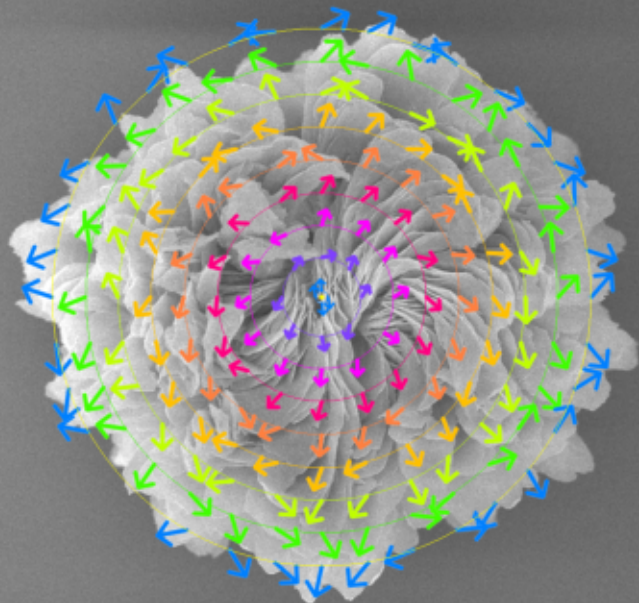
Dominant Tangent (0→ π)



Dominant Normal (0→ π)

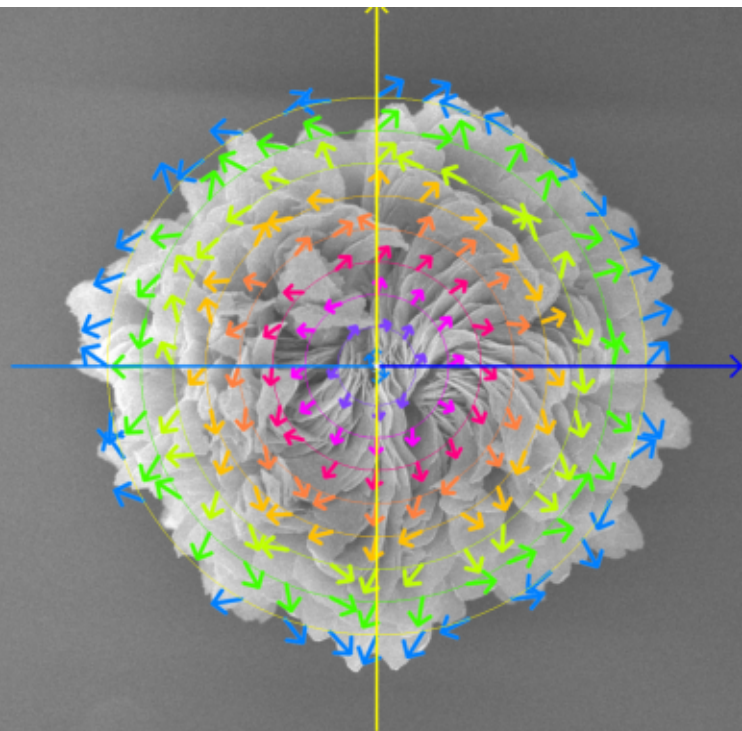


Before rotation



X 3,000 10.0kV SEI SEM 1μm JEOL WD 4.6mm

After rotation (Code A)
(angle=-1.80°)



X 3,000 10.0kV SEI SEM 1μm JEOL WD 4.6mm

Ring coordinates + Angle(α') + Pattern (page 1/6)

Ring	Coordinate	Angle (α')	Pattern
1	(8.00, 0.00)	-83.71	Clockwise
1	(0.00, -8.00)	5.03	Anticlockwise
1	(-8.00, 0.00)	-82.25	Clockwise
1	(0.00, 8.00)	5.86	Anticlockwise
2	(50.00, 0.00)	57.41	Anticlockwise
2	(35.00, -35.00)	-59.73	Clockwise
2	(0.00, -50.00)	12.35	Anticlockwise
2	(-35.00, -35.00)	21.80	Anticlockwise
2	(-50.00, 0.00)	56.39	Anticlockwise
2	(-35.00, 35.00)	-75.56	Clockwise
2	(0.00, 50.00)	-79.87	Clockwise
2	(35.00, 35.00)	20.33	Anticlockwise
3	(91.00, 0.00)	33.90	Anticlockwise
3	(79.00, -45.00)	0.47	Anticlockwise
3	(45.00, -79.00)	-30.09	Clockwise
3	(0.00, -91.00)	-3.17	Clockwise
3	(-45.00, -79.00)	5.85	Anticlockwise
3	(-79.00, -45.00)	5.99	Anticlockwise
3	(-91.00, 0.00)	40.68	Anticlockwise
3	(-79.00, 45.00)	30.45	Anticlockwise
3	(-45.00, 79.00)	79.20	Anticlockwise
3	(0.00, 91.00)	-16.83	Clockwise
3	(45.00, 79.00)	-5.11	Clockwise
3	(79.00, 46.00)	18.44	Anticlockwise
4	(132.00, 0.00)	-41.20	Clockwise
4	(122.00, -51.00)	-38.07	Clockwise
4	(93.00, -93.00)	-27.90	Clockwise
4	(51.00, -122.00)	-6.89	Clockwise
4	(0.00, -132.00)	-12.59	Clockwise
4	(-51.00, -122.00)	-14.15	Clockwise

Ring coordinates + Angle(α') + Pattern (page 2/6)

Ring	Coordinate	Angle (α')	Pattern
4	(-93.00, -93.00)	-61.02	Clockwise
4	(-122.00, -51.00)	56.97	Anticlockwise
4	(-132.00, 0.00)	84.42	Anticlockwise
4	(-122.00, 51.00)	56.50	Anticlockwise
4	(-93.00, 93.00)	44.42	Anticlockwise
4	(-51.00, 122.00)	-70.18	Clockwise
4	(0.00, 132.00)	-37.07	Clockwise
4	(51.00, 122.00)	-25.43	Clockwise
4	(93.00, 93.00)	-10.11	Clockwise
4	(122.00, 51.00)	-32.27	Clockwise
5	(174.00, 0.00)	-33.83	Clockwise
5	(165.00, -54.00)	-46.62	Clockwise
5	(141.00, -102.00)	-24.28	Clockwise
5	(102.00, -141.00)	-79.11	Clockwise
5	(54.00, -165.00)	-34.95	Clockwise
5	(0.00, -174.00)	-8.50	Clockwise
5	(-54.00, -165.00)	-51.13	Clockwise
5	(-102.00, -141.00)	62.67	Anticlockwise
5	(-141.00, -102.00)	64.58	Anticlockwise
5	(-165.00, -54.00)	65.03	Anticlockwise
5	(-174.00, 0.00)	72.84	Anticlockwise
5	(-165.00, 54.00)	48.00	Anticlockwise
5	(-141.00, 102.00)	19.15	Anticlockwise
5	(-102.00, 141.00)	-74.09	Clockwise
5	(-54.00, 165.00)	-73.92	Clockwise
5	(0.00, 174.00)	59.02	Anticlockwise
5	(54.00, 165.00)	-13.14	Clockwise
5	(102.00, 141.00)	-16.47	Clockwise
5	(141.00, 102.00)	-12.40	Clockwise
5	(165.00, 54.00)	-24.68	Clockwise

Ring coordinates + Angle(α') + Pattern (page 3/6)

Ring	Coordinate	Angle (α')	Pattern
6	(216.00, 0.00)	-53.29	Clockwise
6	(209.00, -56.00)	-61.71	Clockwise
6	(187.00, -108.00)	-80.93	Clockwise
6	(153.00, -153.00)	-27.85	Clockwise
6	(108.00, -187.00)	29.05	Anticlockwise
6	(56.00, -209.00)	-77.63	Clockwise
6	(0.00, -216.00)	-14.16	Clockwise
6	(-56.00, -209.00)	-61.62	Clockwise
6	(-108.00, -187.00)	-58.26	Clockwise
6	(-153.00, -153.00)	63.45	Anticlockwise
6	(-187.00, -108.00)	39.20	Anticlockwise
6	(-209.00, -56.00)	87.80	Anticlockwise
6	(-216.00, 0.00)	48.12	Anticlockwise
6	(-209.00, 56.00)	-62.45	Clockwise
6	(-187.00, 108.00)	33.07	Anticlockwise
6	(-153.00, 153.00)	-71.34	Clockwise
6	(-108.00, 187.00)	71.50	Anticlockwise
6	(-56.00, 209.00)	72.33	Anticlockwise
6	(0.00, 216.00)	-7.57	Clockwise
6	(56.00, 209.00)	-28.71	Clockwise
6	(108.00, 187.00)	-64.82	Clockwise
6	(153.00, 153.00)	-80.61	Clockwise
6	(187.00, 108.00)	-82.88	Clockwise
6	(209.00, 56.00)	3.91	Anticlockwise
7	(257.00, 0.00)	-80.17	Clockwise
7	(251.00, -57.00)	-62.19	Clockwise
7	(232.00, -112.00)	-43.88	Clockwise
7	(201.00, -160.00)	0.60	Anticlockwise
7	(160.00, -201.00)	-42.94	Clockwise
7	(112.00, -232.00)	6.37	Anticlockwise

Ring coordinates + Angle(α') + Pattern (page 4/6)

Ring	Coordinate	Angle (α')	Pattern
7	(57.00, -251.00)	-50.79	Clockwise
7	(0.00, -257.00)	-28.41	Clockwise
7	(-57.00, -251.00)	66.94	Anticlockwise
7	(-112.00, -232.00)	-73.35	Clockwise
7	(-160.00, -201.00)	57.80	Anticlockwise
7	(-201.00, -160.00)	35.10	Anticlockwise
7	(-232.00, -112.00)	-21.99	Clockwise
7	(-251.00, -57.00)	40.04	Anticlockwise
7	(-257.00, 0.00)	-63.27	Clockwise
7	(-251.00, 57.00)	-64.56	Clockwise
7	(-232.00, 112.00)	-28.22	Clockwise
7	(-201.00, 160.00)	81.14	Anticlockwise
7	(-160.00, 201.00)	82.78	Anticlockwise
7	(-112.00, 232.00)	49.01	Anticlockwise
7	(-57.00, 251.00)	8.44	Anticlockwise
7	(0.00, 257.00)	-44.45	Clockwise
7	(57.00, 251.00)	78.59	Anticlockwise
7	(112.00, 232.00)	88.60	Anticlockwise
7	(160.00, 201.00)	-75.54	Clockwise
7	(201.00, 160.00)	72.47	Anticlockwise
7	(232.00, 112.00)	51.16	Anticlockwise
7	(251.00, 57.00)	-75.83	Clockwise
8	(298.00, 0.00)	76.42	Anticlockwise
8	(292.00, -58.00)	-27.92	Clockwise
8	(275.00, -114.00)	-30.70	Clockwise
8	(248.00, -166.00)	89.23	Anticlockwise
8	(211.00, -211.00)	54.34	Anticlockwise
8	(166.00, -248.00)	77.89	Anticlockwise
8	(114.00, -275.00)	74.86	Anticlockwise
8	(58.00, -292.00)	-20.85	Clockwise

Ring coordinates + Angle(α') + Pattern (page 5/6)

Ring	Coordinate	Angle (α')	Pattern
8	(0.00, -298.00)	-29.10	Clockwise
8	(-58.00, -292.00)	73.73	Anticlockwise
8	(-114.00, -275.00)	32.64	Anticlockwise
8	(-166.00, -248.00)	62.45	Anticlockwise
8	(-211.00, -211.00)	19.57	Anticlockwise
8	(-248.00, -166.00)	-67.34	Clockwise
8	(-275.00, -114.00)	35.99	Anticlockwise
8	(-292.00, -58.00)	37.55	Anticlockwise
8	(-298.00, 0.00)	1.13	Anticlockwise
8	(-292.00, 58.00)	87.77	Anticlockwise
8	(-275.00, 114.00)	67.22	Anticlockwise
8	(-248.00, 166.00)	40.65	Anticlockwise
8	(-211.00, 211.00)	-55.18	Clockwise
8	(-166.00, 248.00)	28.93	Anticlockwise
8	(-114.00, 275.00)	58.06	Anticlockwise
8	(-58.00, 292.00)	53.90	Anticlockwise
8	(0.00, 298.00)	-47.89	Clockwise
8	(58.00, 292.00)	-87.12	Clockwise
8	(114.00, 275.00)	35.03	Anticlockwise
8	(166.00, 248.00)	5.65	Anticlockwise
8	(211.00, 211.00)	30.52	Anticlockwise
8	(248.00, 166.00)	-44.04	Clockwise
8	(275.00, 114.00)	-6.04	Clockwise
8	(292.00, 58.00)	-86.11	Clockwise
9	(340.00, 0.00)	49.41	Anticlockwise
9	(335.00, -59.00)	-44.21	Clockwise
9	(319.00, -116.00)	55.88	Anticlockwise
9	(294.00, -170.00)	-82.85	Clockwise
9	(260.00, -219.00)	-21.76	Clockwise
9	(219.00, -260.00)	-89.75	Clockwise

Ring coordinates + Angle(α') + Pattern (page 6/6)

Ring	Coordinate	Angle (α')	Pattern
9	(170.00, -294.00)	66.42	Anticlockwise
9	(116.00, -319.00)	-83.79	Clockwise
9	(59.00, -335.00)	-41.62	Clockwise
9	(0.00, -340.00)	-24.28	Clockwise
9	(-59.00, -335.00)	52.95	Anticlockwise
9	(-116.00, -319.00)	57.52	Anticlockwise
9	(-170.00, -294.00)	-50.46	Clockwise
9	(-294.00, -170.00)	-50.50	Clockwise
9	(-319.00, -116.00)	-75.32	Clockwise
9	(-335.00, -59.00)	76.83	Anticlockwise
9	(-340.00, 0.00)	-36.03	Clockwise
9	(-335.00, 59.00)	31.86	Anticlockwise
9	(-319.00, 116.00)	39.61	Anticlockwise
9	(-294.00, 170.00)	59.42	Anticlockwise
9	(-260.00, 219.00)	-33.33	Clockwise
9	(-219.00, 260.00)	85.57	Anticlockwise
9	(-170.00, 294.00)	55.32	Anticlockwise
9	(-116.00, 319.00)	-69.38	Clockwise
9	(-59.00, 335.00)	83.30	Anticlockwise
9	(0.00, 340.00)	-57.72	Clockwise
9	(59.00, 335.00)	-46.98	Clockwise
9	(116.00, 319.00)	86.61	Anticlockwise
9	(170.00, 294.00)	87.23	Anticlockwise
9	(218.00, 260.00)	-80.09	Clockwise
9	(260.00, 219.00)	-84.85	Clockwise
9	(294.00, 170.00)	-55.21	Clockwise
9	(319.00, 116.00)	-2.53	Clockwise
9	(335.00, 59.00)	10.28	Anticlockwise
SUMMARY	n_vectors=178	nan	Clockwise