RTI LABORATORIES

- Report of Analytical Services -

Submitter:
Zero Waste Ithaca
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Ithaca, NY 14851

Report Date: 07/31/2025
Phone:
FAX:

Attn: [redacted]

P.O. Number:

RTI Lab#: 2507067
Client Sample ID: **GLI ID W-2521**
Ht #:
Sample Type: Fluorine distribution of prepared cross-section by SEM/EDS/mapping **Sample Receipt Date:** 07/07/2025

The sample received as an artificial turf sample. The target of the analysis was to characterize the cross-sectioned surface of the green fibers and analyze the chemistry using the techniques of SEM (Scanning Electron Microscopy) and EDS (Energy Dispersive X-ray Spectroscopy). The results of the analysis shown below.

Results:

The green fibers cut and placed in the epoxy solution and mount prepared. The prepared mount then subjected to SEM and EDS analysis. The SEM images of the samples obtained using back-scattered electron detector in the composition mode and shown in figures 1, 1a, and 1d. The EDS spectra of the samples presented below in figures 1b and 1e. The electron mapping shows distribution of fluorine and other elements in the target surface areas as presented in figures 1c and 1f.

Approved By **Lloyd Kaufman**
Director of Materials Sciences

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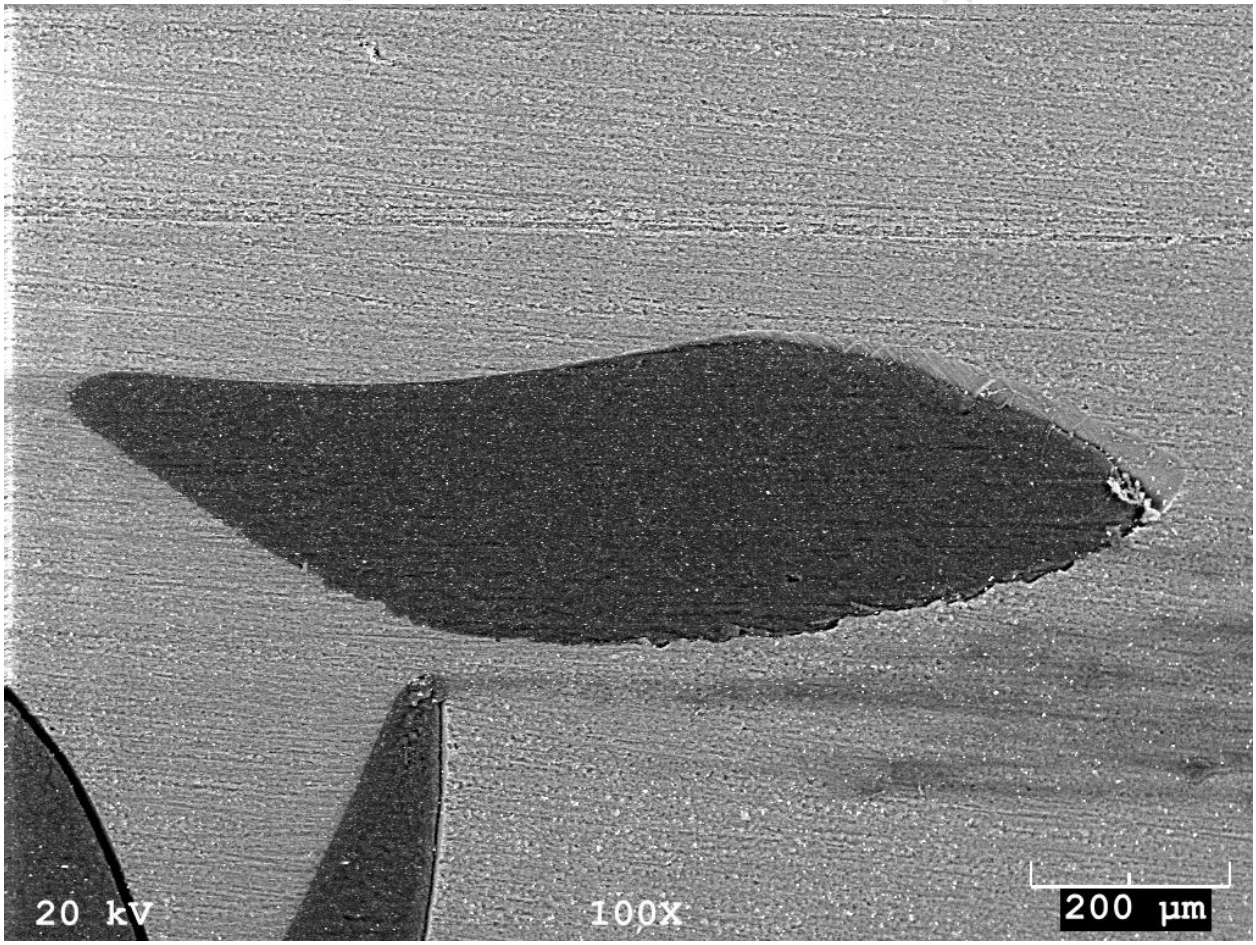

Figure 1: The SEM photomicrograph image of the cross-sectioned surface on the mount for sample 2507067

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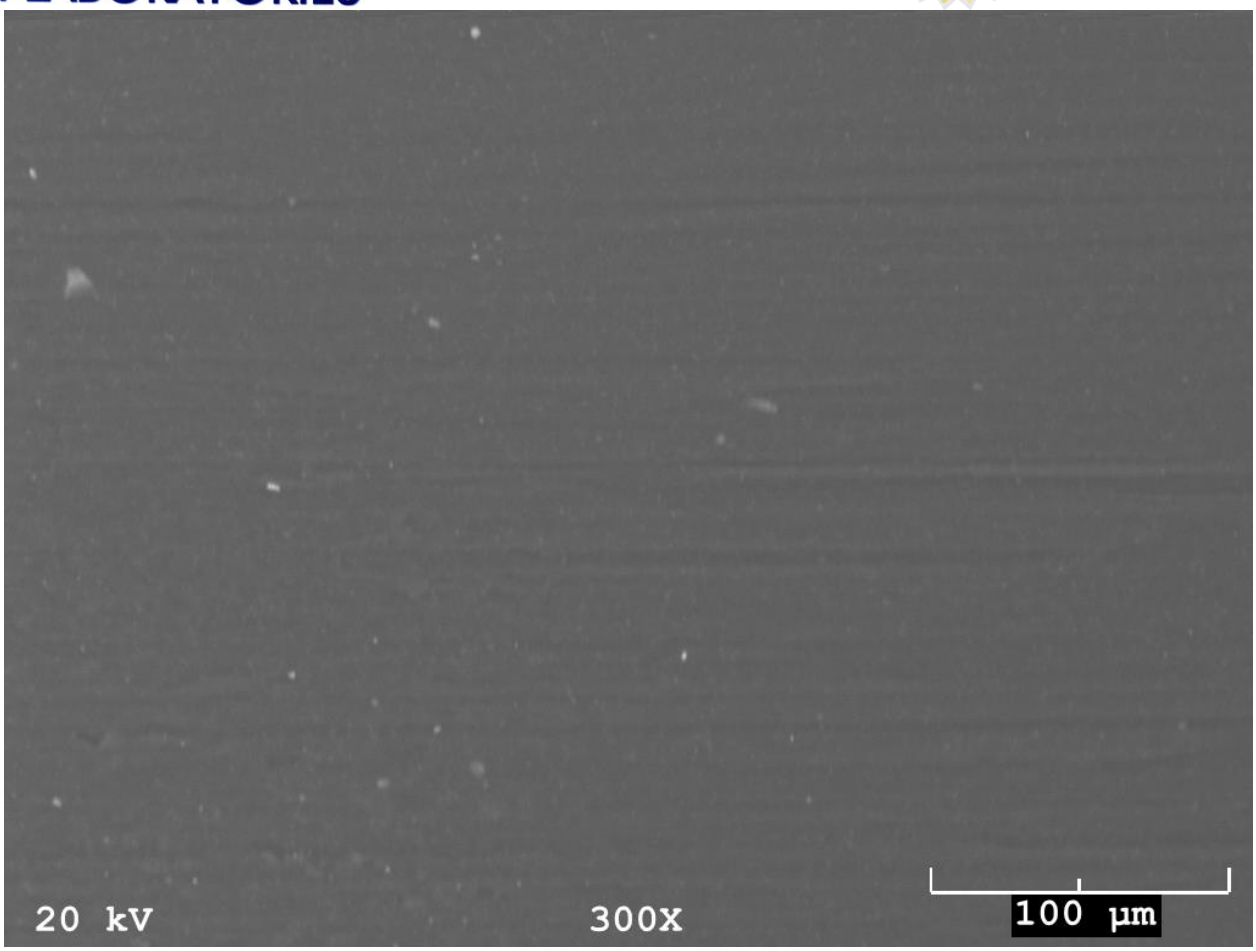

Figure 1a: The SEM photomicrograph image of the sample 2507067

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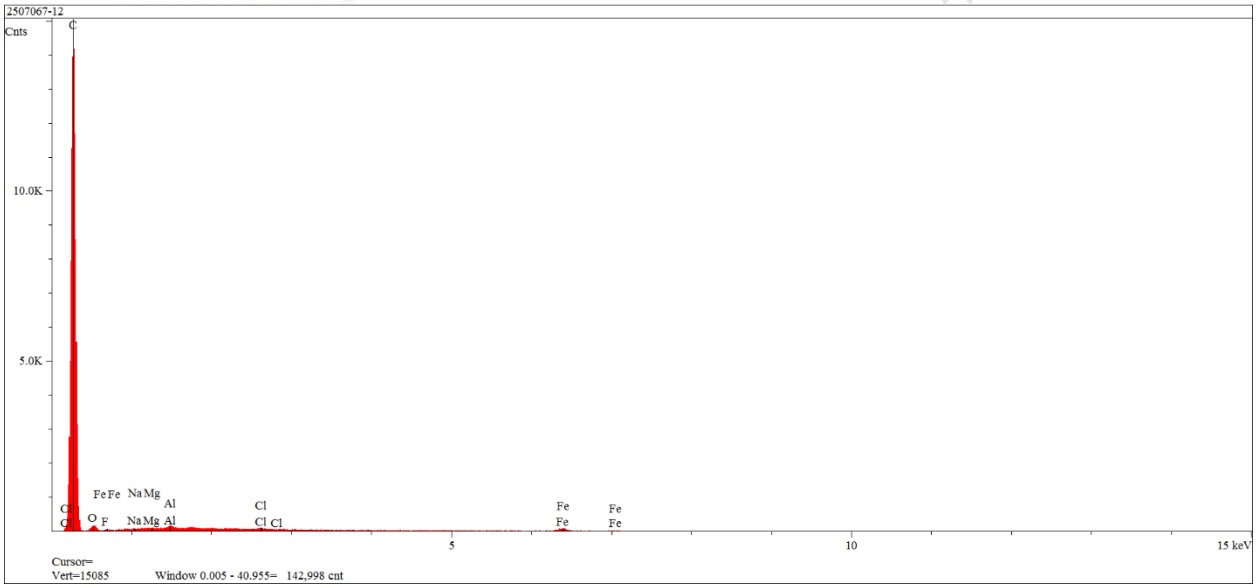

Figure 1b: The EDS spectrum of the sample 2507067

Elt.	Line	Intensity (c/s)	Conc	Units	Error 2-sig	MDL 3-sig			
C	Ka	2,223.2	89.537	wt.%	0.593	0.089			
O	Ka	25.42	7.747	wt.%	0.609	0.579			
F	Ka	2.27	0.320	wt.%	0.197	0.283			
Na	Ka	5.42	0.179	wt.%	0.063	0.089			
Mg	Ka	9.14	0.213	wt.%	0.048	0.066			
Al	Ka	19.33	0.394	wt.%	0.051	0.065			
Si	Ka	9.85	0.183	wt.%	0.043	0.060			
Cl	Ka	9.80	0.191	wt.%	0.043	0.059			
Fe	Ka	22.16	1.237	wt.%	0.103	0.096			
			100.000	wt.%			Total	kV	20.0

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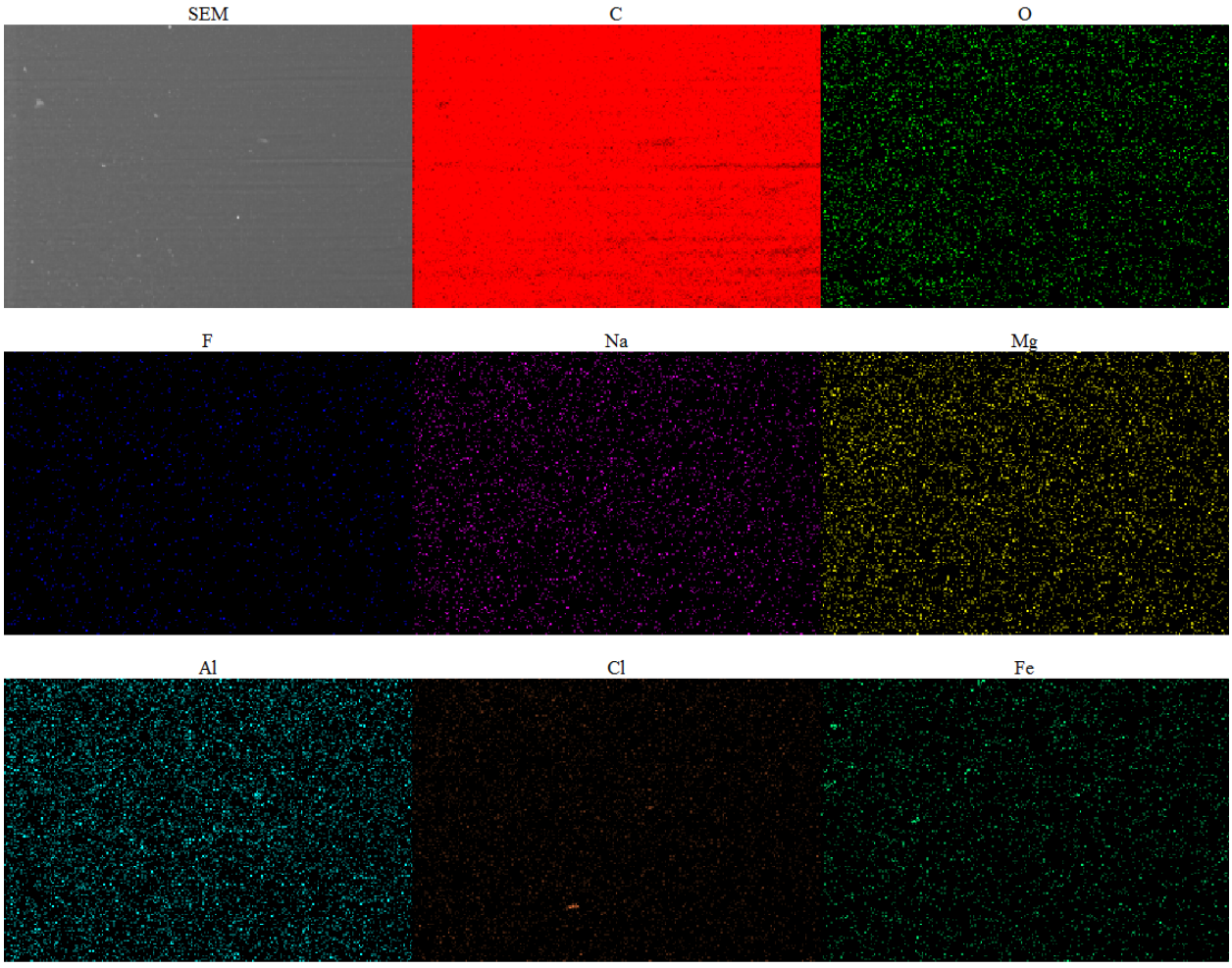

Figure 1c: The electron mapping of the cross-sectioned surface for sample 2507067

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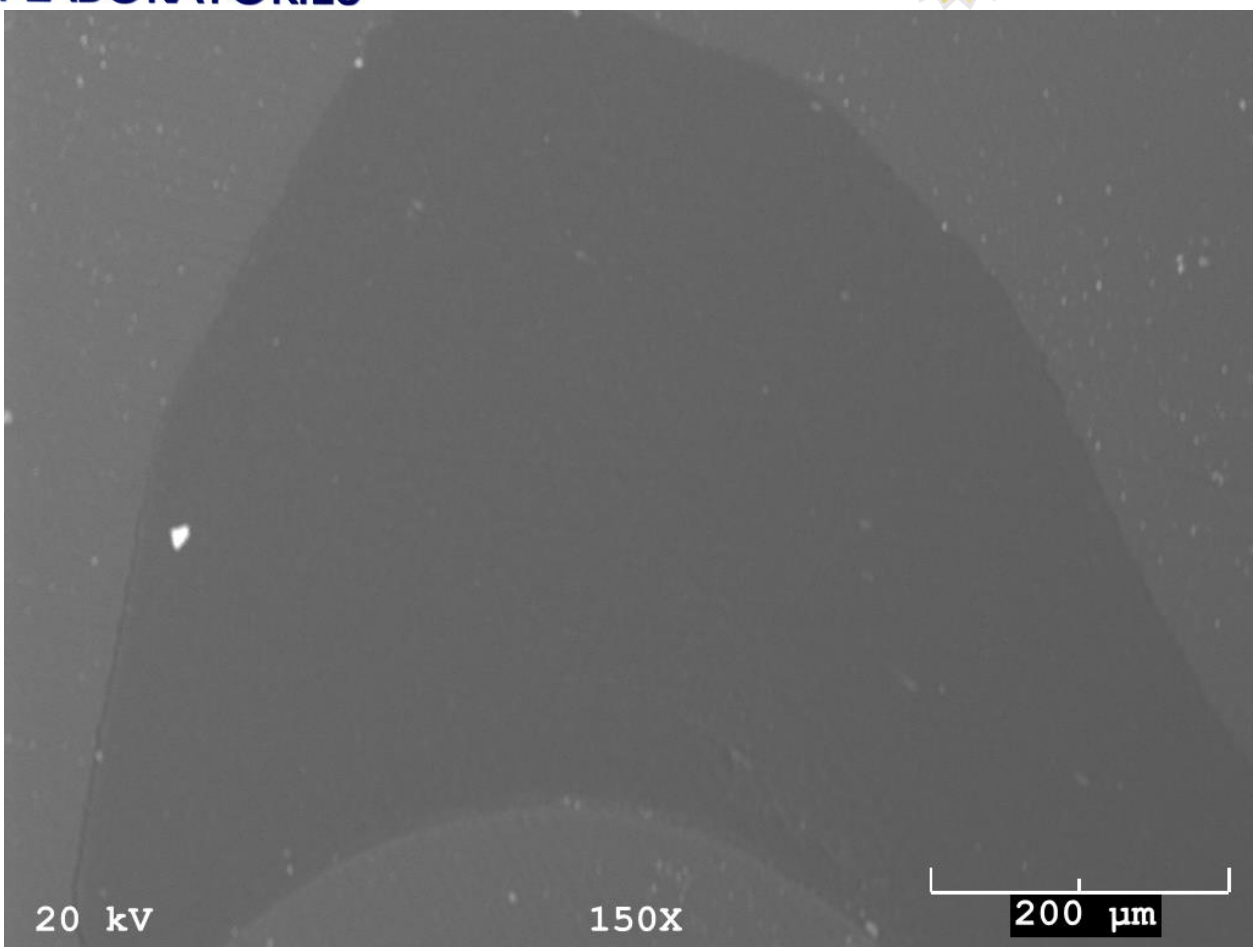

Figure 1d: The SEM photomicrograph image of the sample 2507067

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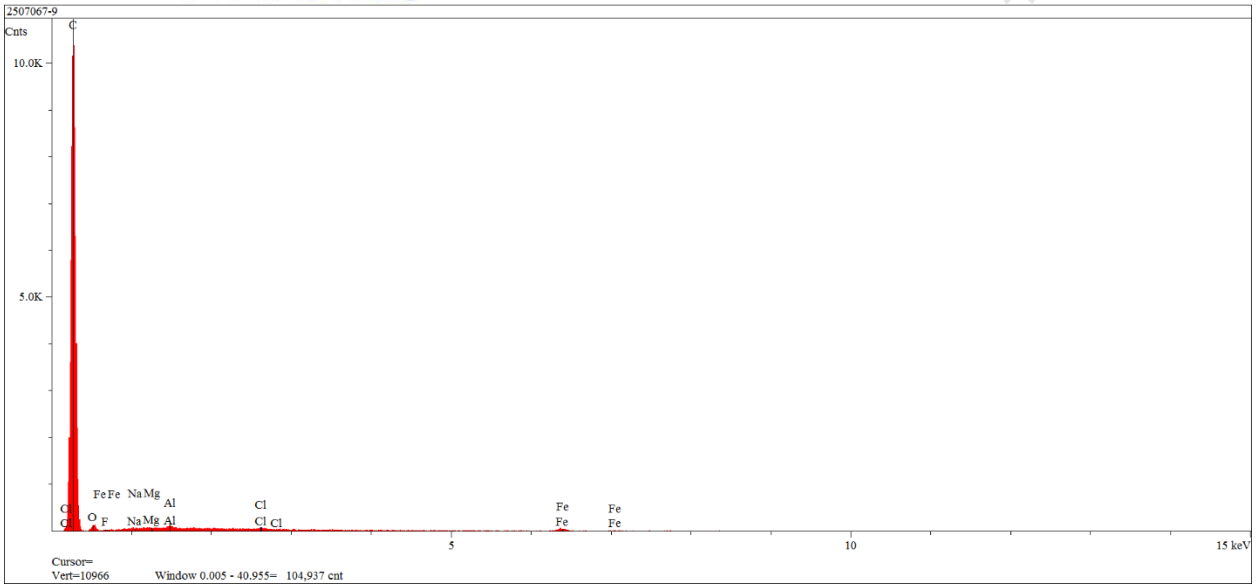

Figure 1e: The EDS spectrum of the sample 2507067

Elt.	Line	Intensity (c/s)	Conc	Units	Error 2-sig	MDL 3-sig			
C	Ka	2,022.4	90.011	wt.%	0.704	0.143			
O	Ka	21.50	7.335	wt.%	0.736	0.747			
F	Ka	1.06	0.166	wt.%	0.238	0.354			
Na	Ka	7.49	0.274	wt.%	0.079	0.108			
Mg	Ka	9.41	0.243	wt.%	0.059	0.079			
Al	Ka	18.57	0.421	wt.%	0.061	0.077			
Cl	Ka	11.25	0.243	wt.%	0.052	0.070			
Fe	Ka	21.06	1.307	wt.%	0.121	0.107			
			100.000	wt.%			Total	kV	20.0

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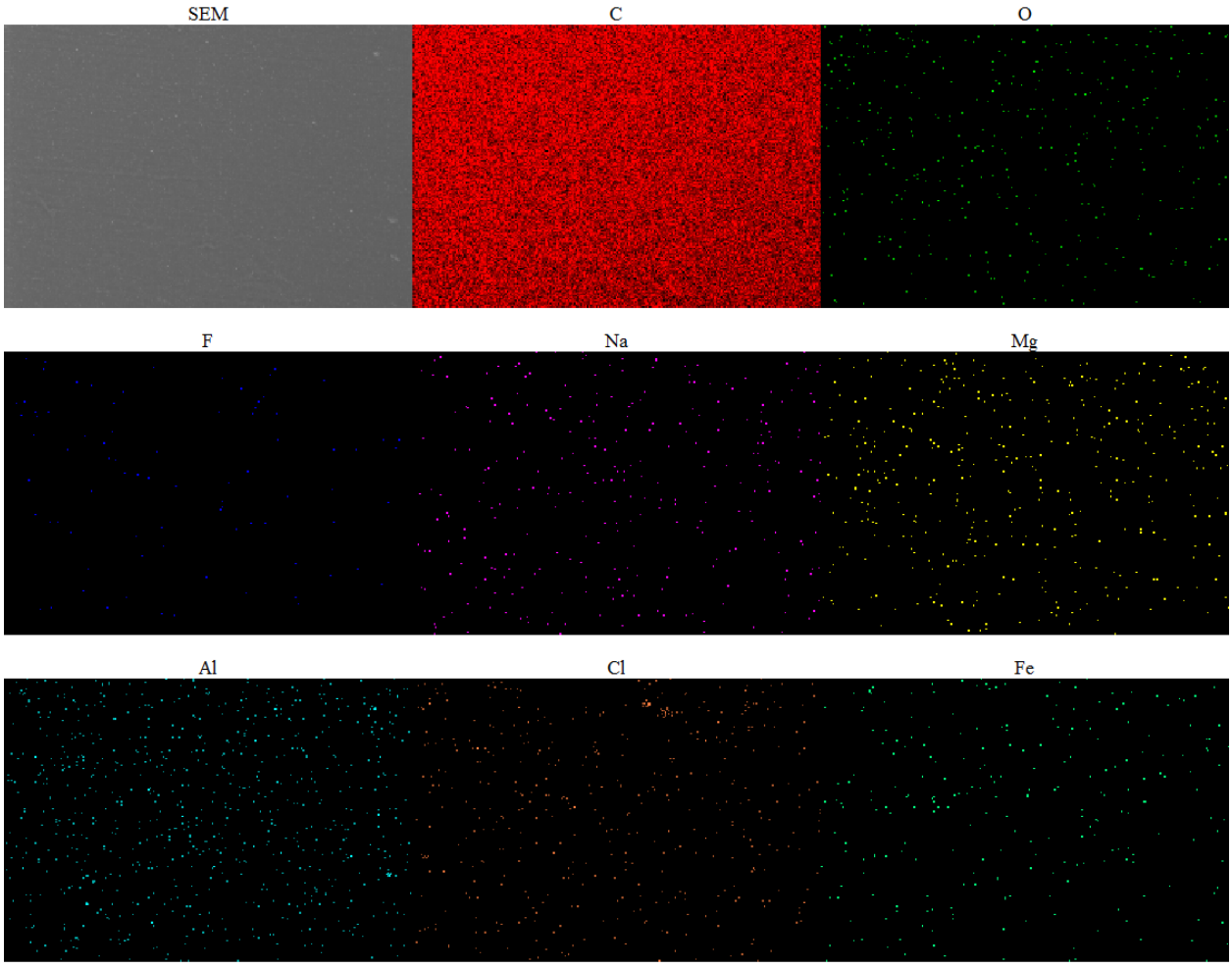

Figure 1f: The electron mapping of the cross-sectioned surface for sample 2507067

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