

Subject: Morphological and physicochemical characterization of black surface defects of a composite.

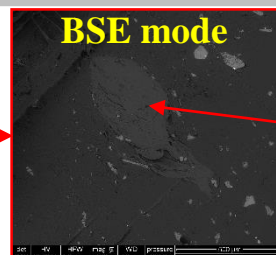
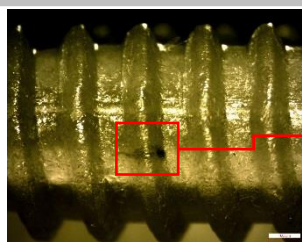
Techniques: SEM-EDS and FTIR

- ✓ Morphological and elemental composition of defects
- ✓ Determination of the chemical nature of the defect

Results:

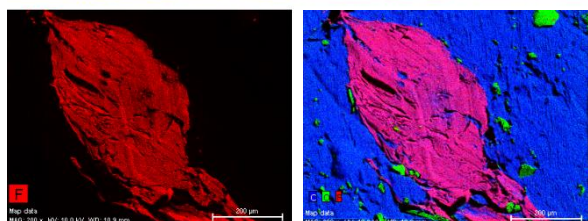
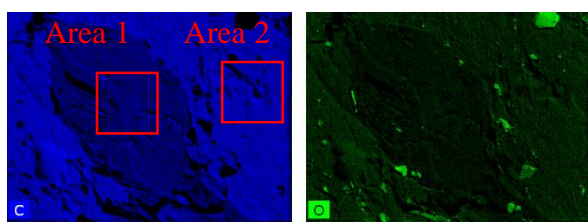
1. Defect observation

Optical image of the defect

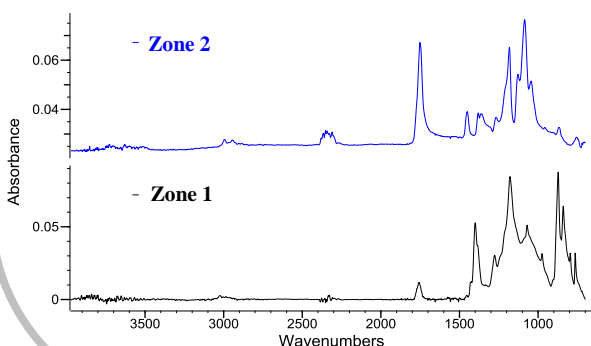


SEM image
Inside the defect
(after preparation)

2. Chemical nature of the defect

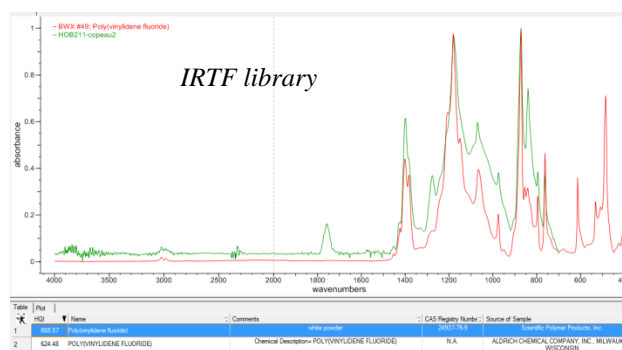
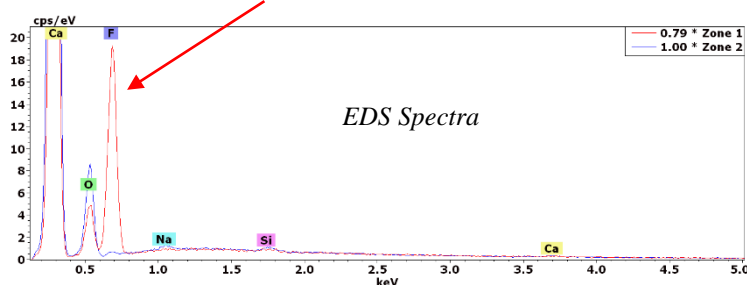


EDS cartographies



IRTF spectra

The presence of an amorphous structure, rich in fluorine



Black defect => Poly(vinylidene fluoride) compounds (PVdF)

Conclusion:

Coupling SEM-EDS / FTIR to determine the chemical nature of surface defects of a composite and to identify a problem in the composite manufacturing process.