

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

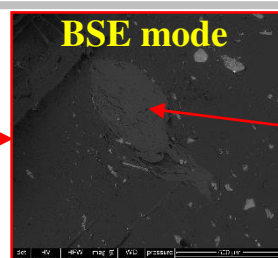
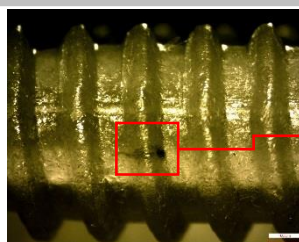
Techniques: SEM-EDS and FTIR

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

Results:

1. Defect observation

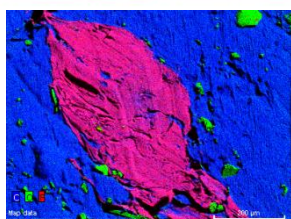
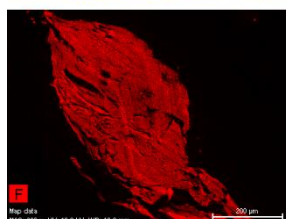
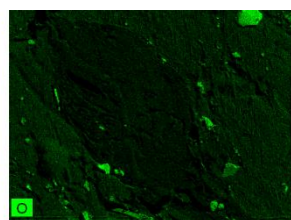
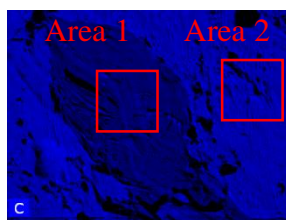
Optical image of the defect



SEM image

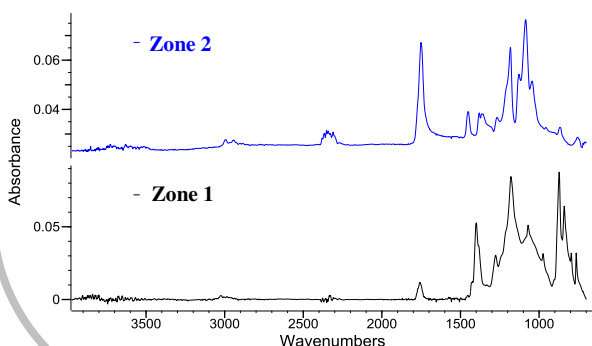
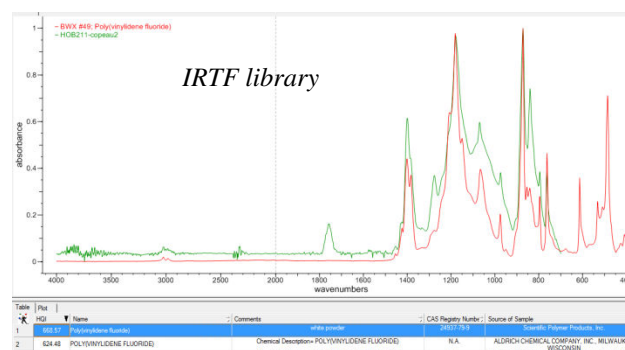
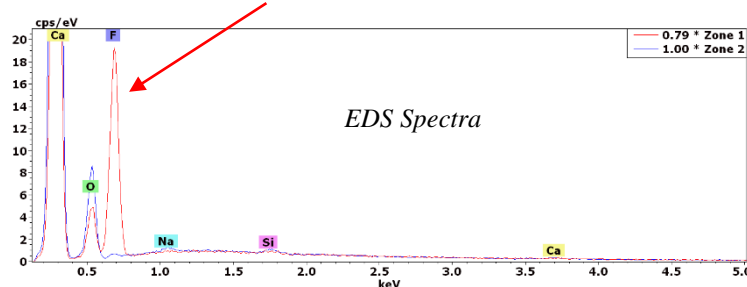
Inside the defect
(after preparation)

2. Chemical nature of the defect



EDS cartographies

→ 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.