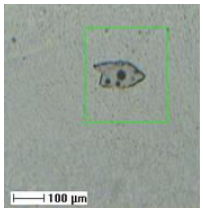
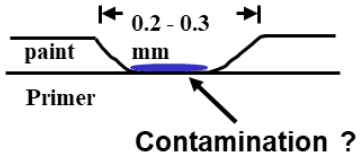
PAINT ADHESION FAILURE CHARACTERISATION

SERMA TECHNOLOGIES

Subject: Crater formation on a paint due to a wettability defect of the paint on a primer.



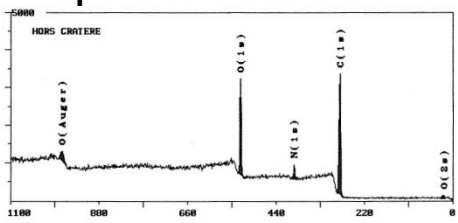


Techniques used: XPS + ToF-SIMS

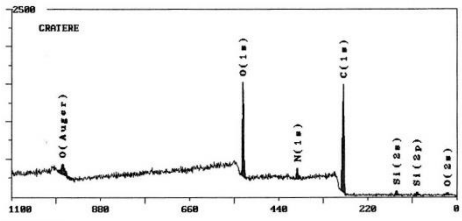
- ✓ **XPS** : localised analysis (crater size < 500 µm) and elemental/chemical identification of contaminant.
- ✓ **ToF-SIMS** : molecular analysis.

Results :

XPS spectrum outside the crater



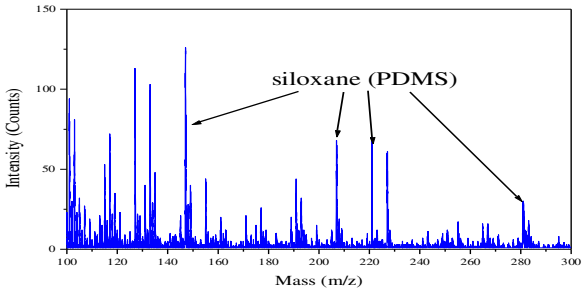
XPS spectrum in the crater



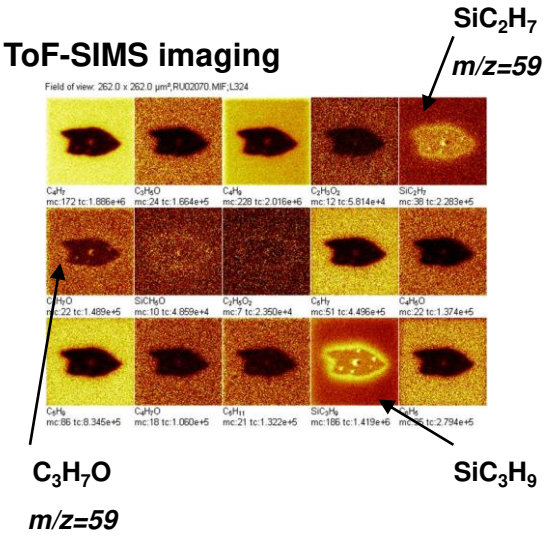
XPS quantitative analysis

at.%	C	O	N	Si
crater	73	22	3	2
outside crater	74	23	3	-

ToF-SIMS spectrum inside crater



ToF-SIMS imaging



Conclusion :

- ✓ **By XPS** : adhesion failure due to surface contamination by a siloxane compound
- ✓ **By ToF-SIMS** : PolyDiMethylSiloxane (PDMS) contaminant