

1 Table 1: Rules for sorting particles by composition into components of PM_{10-2.5}. Numbers
 2 shown in rules are the percentage of the given element with reference to the
 3 total X-ray spectrum.

Class #	Component	Rule	Potential Sources
1	pollen	$P \geq 3$ and $Ca \geq 3$ and $C \geq 80$	
2	C-rich	$C \geq 50$	
3	NaCl	$(Na+Cl) > 70$ and $Na > 20$ and $Cl > 30$	
4	Na-rich	$Na \geq 40$	
5	Ca/S-rich	$Ca \geq 20$ and $S \geq 20$	
6	Si/Al-rich	$Si \geq 30$ and $Al \geq 10$	
7	Fe-oxide	$Fe \geq 75$	
8	Al-rich	$Al \geq 70$	
9	Si-rich	$Si \geq 60$	
10	metal-rich	$Ti > 5$ or $Cr > 5$ or $Mn > 5$ or $Ni > 5$ or $Cu > 5$ or $Zn > 5$ or $Ba > 5$ or $Pb > 5$	
11	Fe-rich	$Fe \geq 40$	
12	Ca-rich	$Ca \geq 40$	
13	miscellaneous	Catch all	

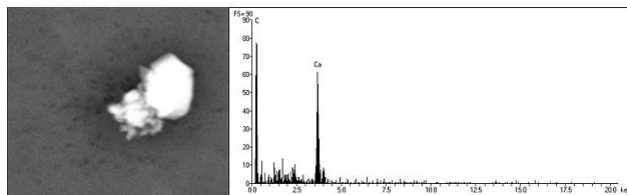
1

PPENDIX A:

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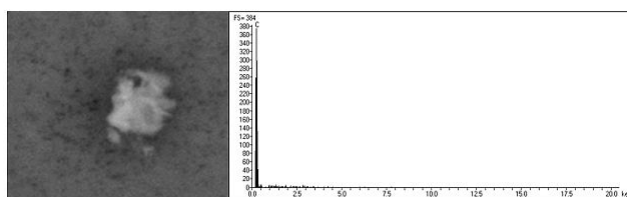
CCSEM-EDS X-RAY SPECTRA

3



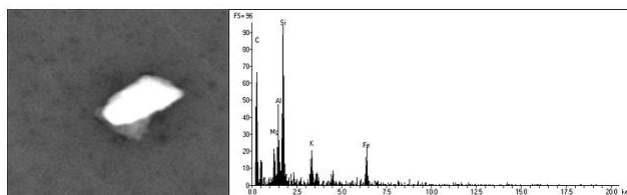
Ca-rich class

6



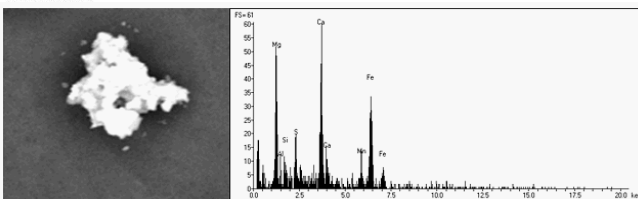
Carbon class

10



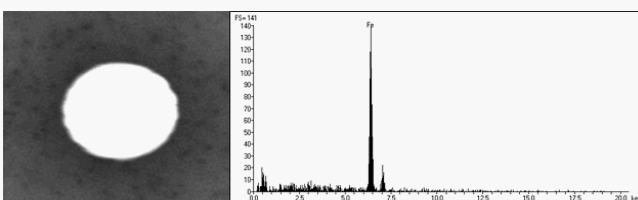
Crustal class

14



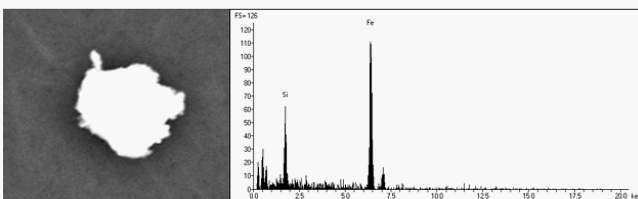
Other class

17



Fe-oxide class

21



Fe-rich class

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Figure A.1: X-ray spectra and scanning electron microscopy images of individual particles. These include: Ca rich, carbon, crustal, miscellaneous (other), Fe oxide, and Fe rich classes.

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