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Apêndice A – Análise mineralógica do material utilizado para confecção dos blocos de arenito sintético

BOLETIM DE RESULTADOS – Laboratório de Microscopia Eletrônica de Varredura.

Método de Análise

A amostra foi inicialmente montada sobre suporte de latão em fita adesiva de carbono e recoberta por uma camada condutora de carbono, através do metalizador EMITECH K950X, a fim de torná-la também condutora. Foi analisada ao microscópio eletrônico de varredura JEOL JSM 6460 LV, em imagens por elétrons retroespalhados, operando em alto vácuo, a 20 kV e com distância de trabalho de 10 mm.

As microanálises por EDS foram obtidas através do Sistema de Microanálises SIX da Thermo-Noran, acoplado ao MEV. As microanálises estão indicadas por círculos nas imagens. A tabela composicional está em percentual de peso atômico e normalizada para forma de óxidos.

Resultados

A amostra é predominantemente composta por grãos de quartzo. Também foram encontrados grãos de feldspato potássico e um grão de óxido de ferro e titânio (mineral ilmenita).

Amostra de Grãos

FOTO 1 – 15X

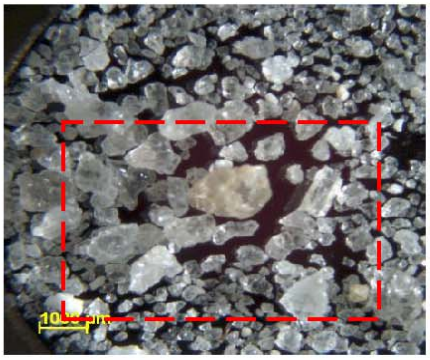


Imagem por lupa de amostra montada sobre fita condutora de carbono.

FOTO 2 – 18X

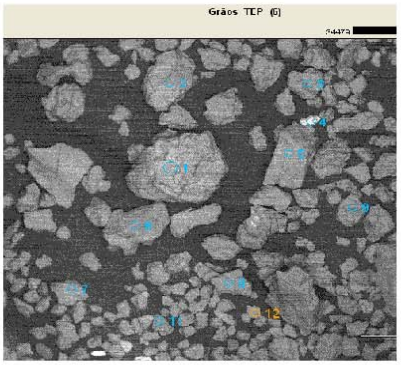
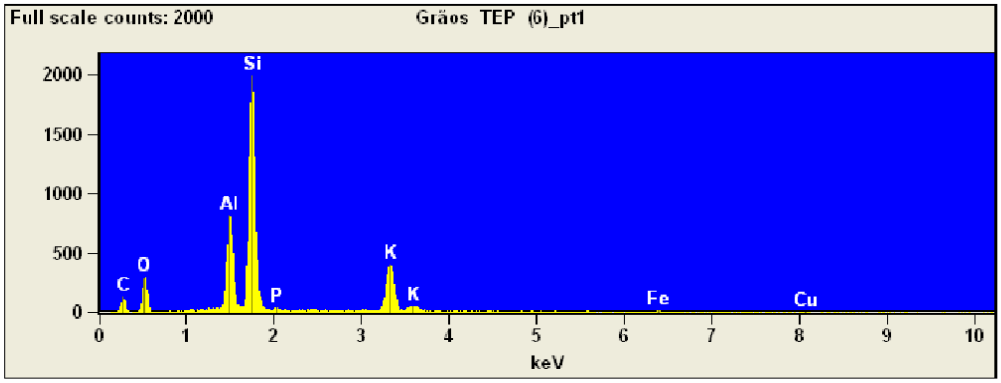


Imagem por elétrons retroespalhados em área indicada na foto 1, com doze microanálises por EDS, conforme resultados abaixo. A composição dos grãos indica predominância de quartzo. Também foram encontrados grãos de feldspato potássico (grão 1 e 12) e um grão de ilmenita - óxido de ferro e titânio (grão 4).

Norm. Compound %

	Al2O3	SiO2	P2O5	K2O	TiO2	Cr2O3	MnO	Fe2O3
Grãos TEP (6)_pt1	20.78	62.65	1.21	13.70				1.11
Grãos TEP (6)_pt2	1.06	98.94						
Grãos TEP (6)_pt3	5.50	94.50						
Grãos TEP (6)_pt4	4.21	8.06			59.57	0.12	1.73	26.02
Grãos TEP (6)_pt5	1.18	98.82						
Grãos TEP (6)_pt6	1.31	98.69						
Grãos TEP (6)_pt7	1.96	98.04						
Grãos TEP (6)_pt8	1.22	98.78						
Grãos TEP (6)_pt9	5.35	93.70						0.95
Grãos TEP (6)_pt10	3.07	96.93						
Grãos TEP (6)_pt11	2.28	97.72						
Grãos TEP (6)_pt12	17.26	65.04		16.84				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Grãos TEP (6)_pt1
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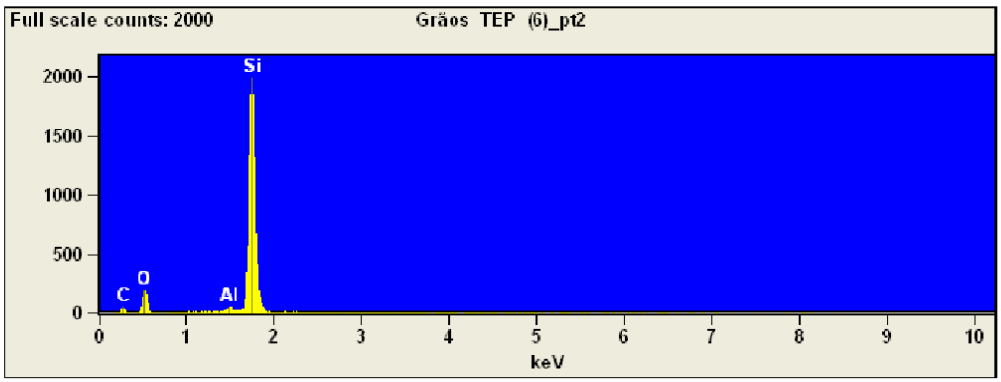
1000
500
0
Si
Al
O
C
P
K
K
Fe
Cu
0 1 2 3 4 5 6 7 8 9 10
keV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1000
500
0
Si
C
O
Al
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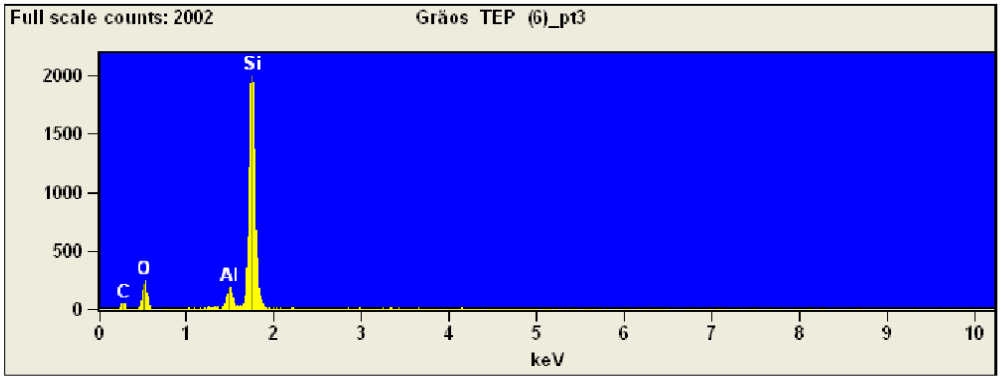
keV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1000
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C
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Al
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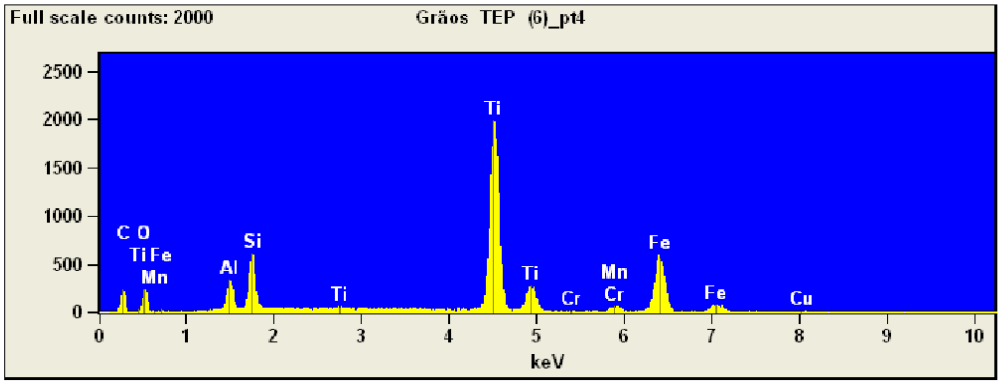
keV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Grãos TEP (6)_pt4
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1000
500
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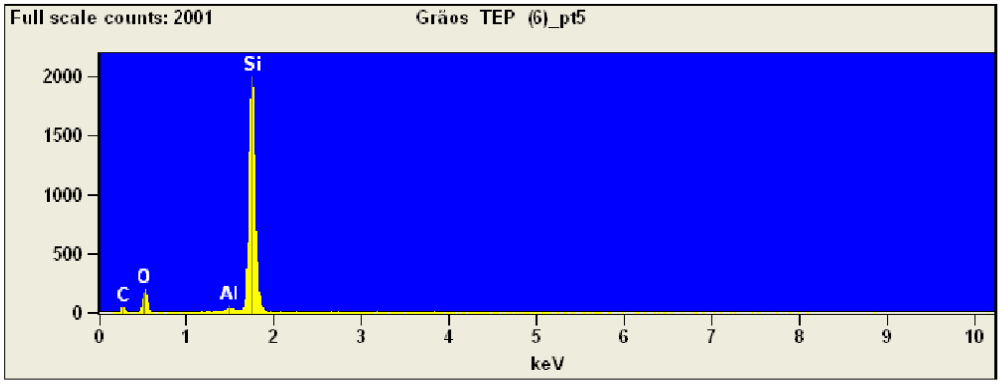
Cr
Fe
Fe
Cu
0 1 2 3 4 5 6 7 8 9 10
keV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O
C
Al
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1500
1000
500
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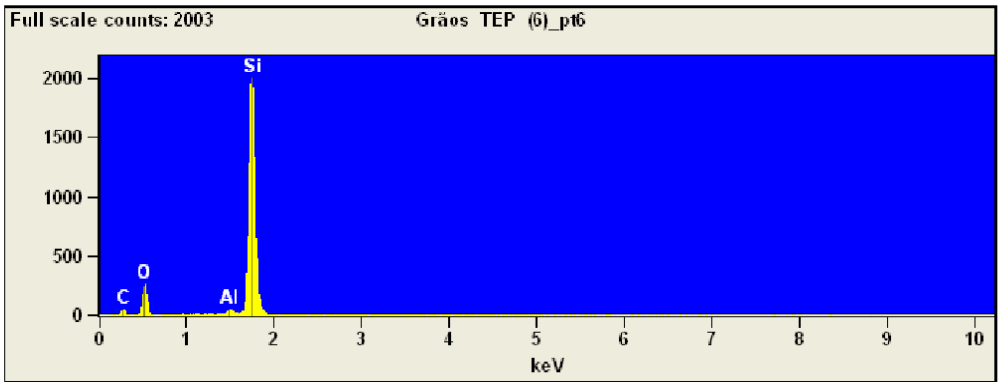
keV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O
C
Al
2000
1500
1000
500
0
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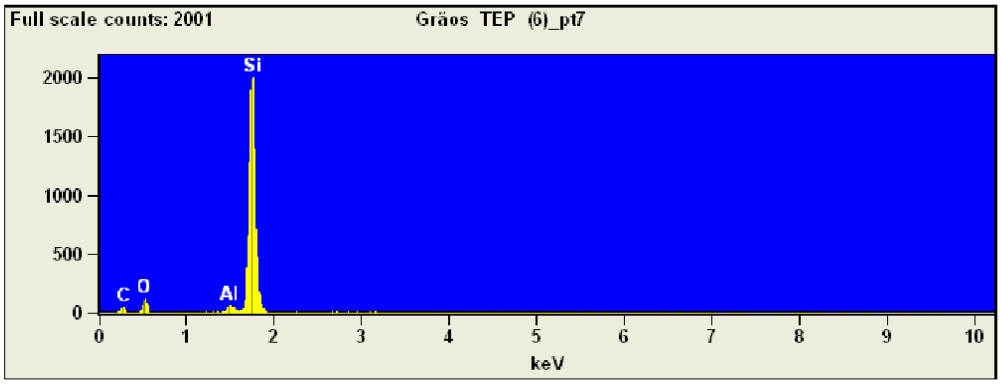
keV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O
C
Al
2000
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1000
500
0
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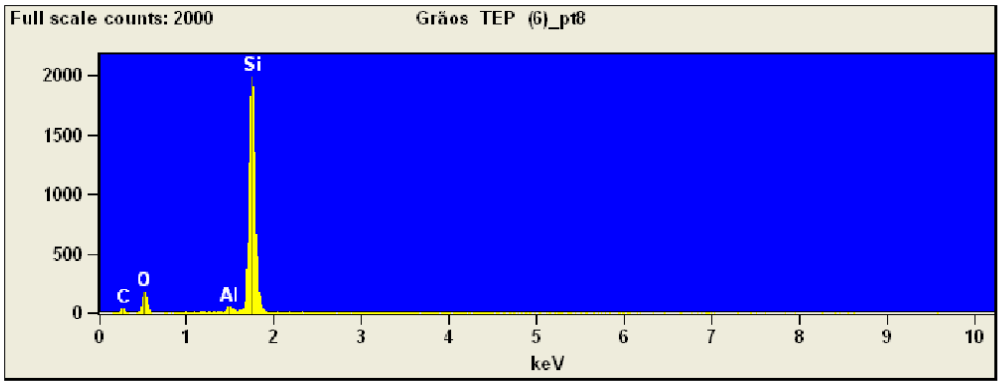
keV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O
C
Al
2000
1500
1000
500
0
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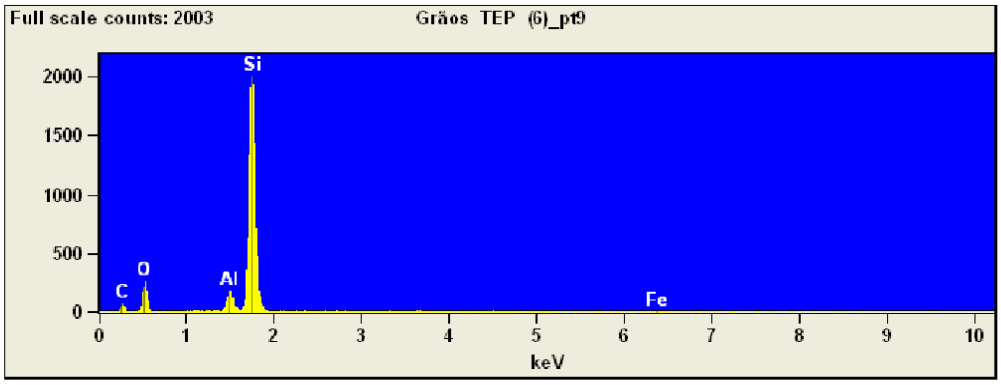
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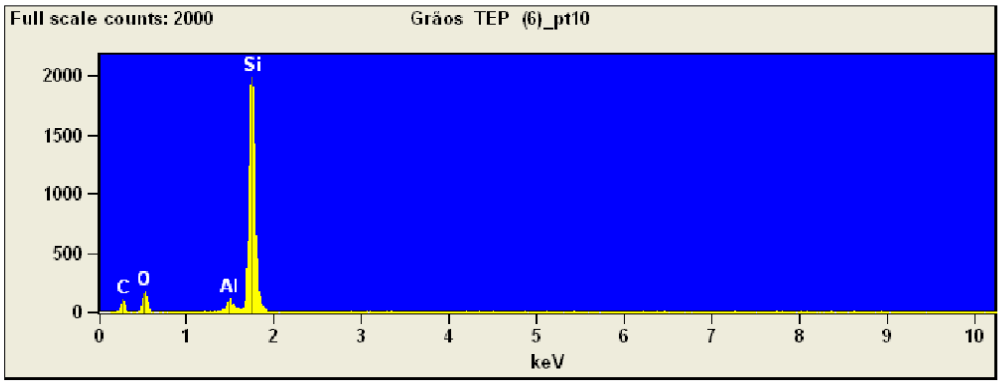
O
C
Al
Fe
keV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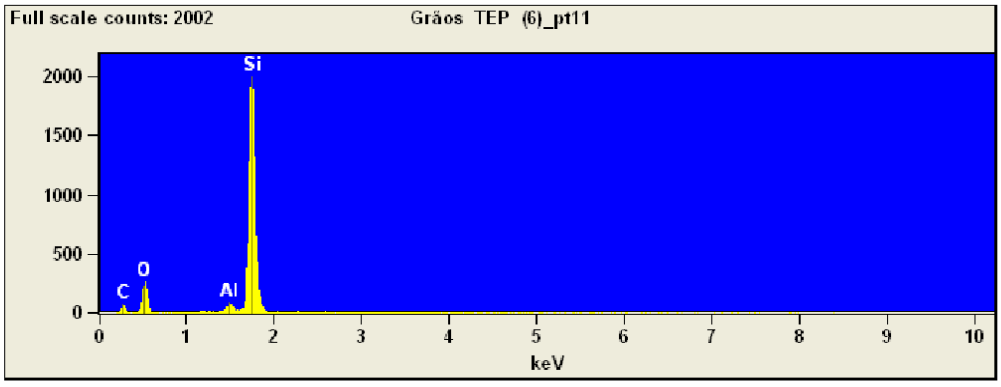
O
Al
keV


Full scale counts: 2002
Grãos TEP (6)_pt11
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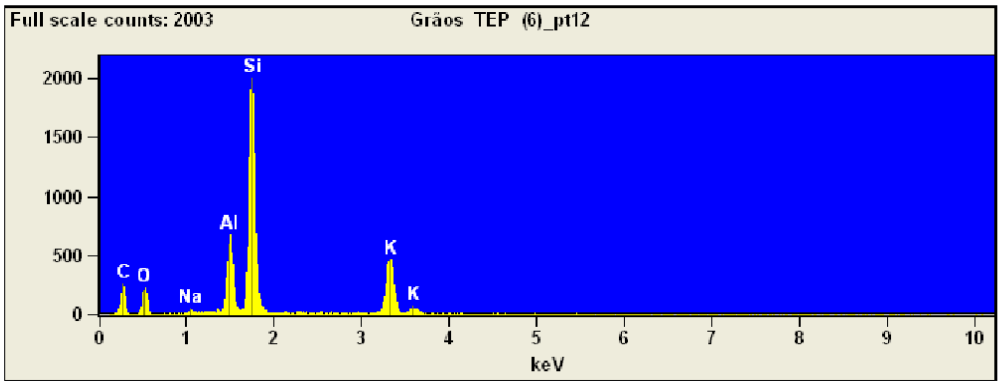
C
O
Al
keV


Full scale counts: 2003
Grãos TEP (6)_pt12
Si
Al
K
C
O
Na
K
keV

Composição

Areia desagregada, com intervalo granulométrico variando de areia muito fina a grossa (moda muito fina), moderadamente a pobremente selecionada, constituída por quartzo, feldspato (K-feldspato e plagioclásio), biotita, muscovita, turmalina, mineral opaco (ilmenita), óxido de ferro, fragmentos de bioclastos e provável contaminante não identificado (artefato).

Apêndice B – Fotos do ensaio e vídeos da formação do *breakout* em poço aberto e execução do ensaio.