



Scanning electron micrograph images for unmodified PGE (A) and electroactivated PGE (B).

Elemental peak area measured in SEM.

Unmodified PGE		Electroactivated PGE	
Element	Net Inte.	Element	Net Inte.
C K	363.4	C K	305.11
O K	4.23	O K	6.26
MgK	5.04	NaK	10.1
AlK	7.46	MgK	4.09
S K	10.07	AlK	6.17
		P K	14.64
		S K	6.5
		K K	3.52

Scanning Electron Microscopy (SEM) experiments were performed using a Hitachi S2600N Scanning Electron Microscope with EDAX probe, an accelerating voltage of 25 kV with 4 nm resolution, using different magnifying domains.

The oxygen area augmentation, considering oxygen net peak area, is about 33%.

Using a  $[\text{Fe}(\text{CN})_6]^{3-/4-}$  redox probe, based on Randles-Sevcik (and Cottrell) equations, it was noticed that the active area of PGE electroactivated increased about 32.2% from 14.71 mm<sup>2</sup> (active area of PGE unmodified) to 18.59 mm<sup>2</sup> (active area of PGE electroactivated). It should be mentioned that geometrical area of PGE, calculated as  $A = (\pi r^2) + 2\pi r h$  is 15.89 mm<sup>2</sup> ( $r=0.25$  mm;  $h=10$  mm;  $h$ =immersed region).

