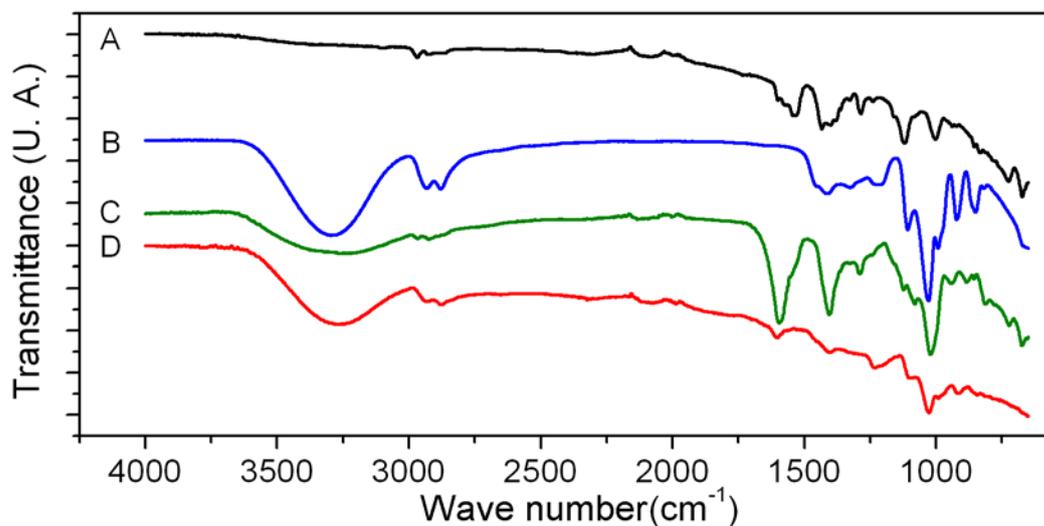
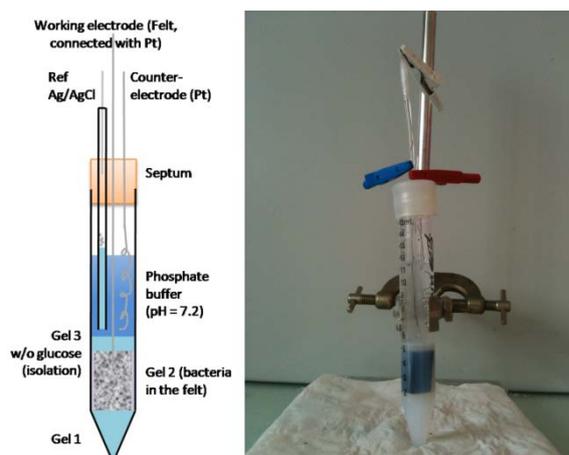


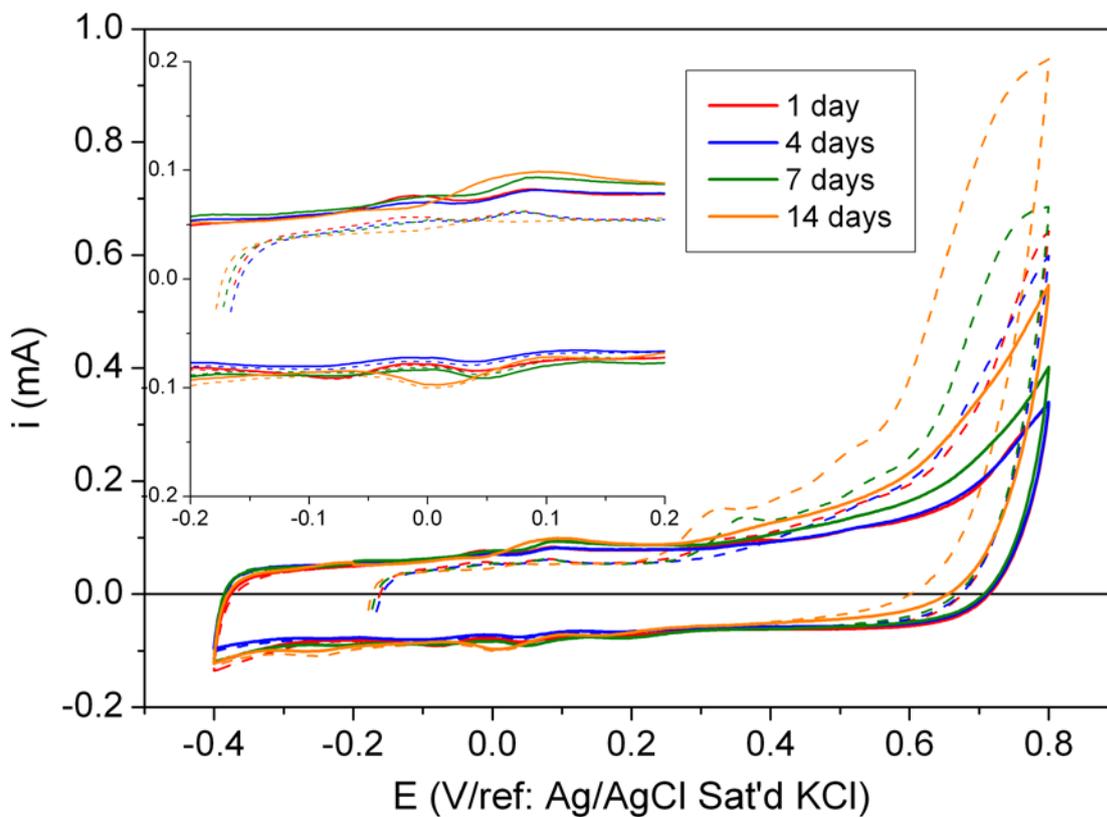
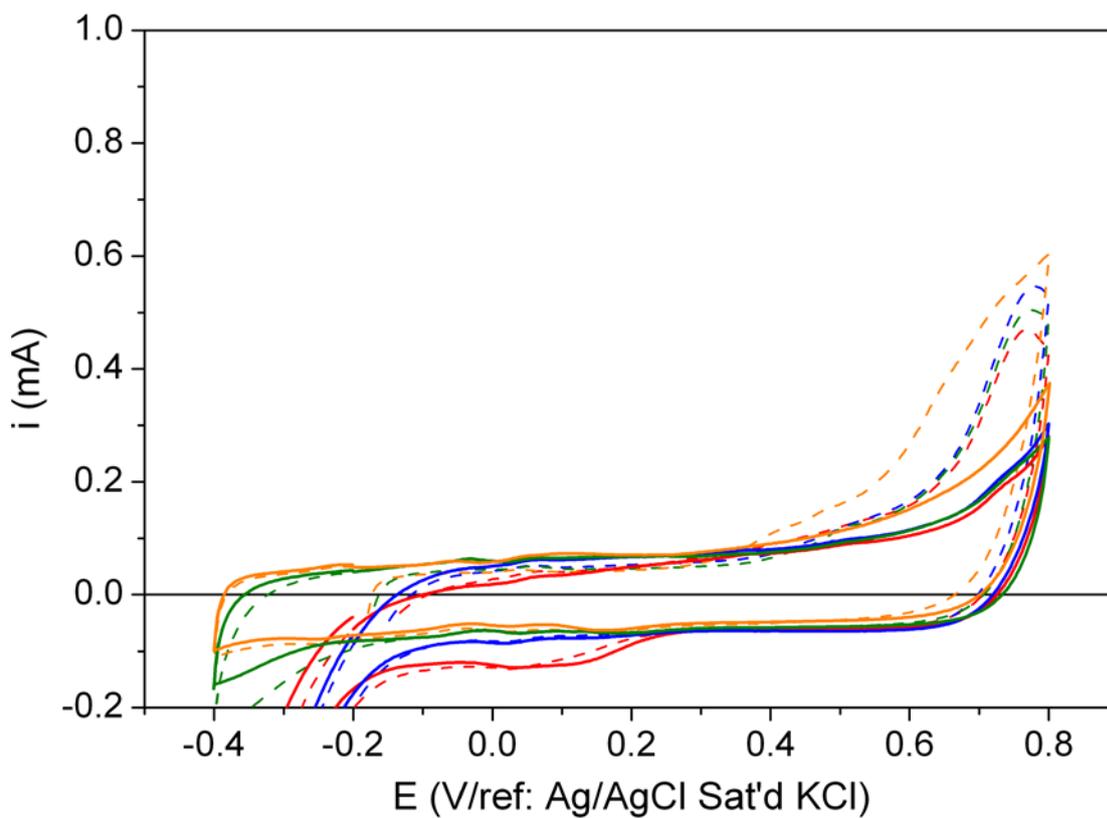
ESI-1: SEM views of (A,B) untreated, (C,D) alginate-treated and (E,F) silicified graphite felt. A: close view of a graphite fiber. B: general view of the untreated felt. C: fibers bundled together by the alginate deposit. A thinner deposit can be seen on neighbouring non-aggregated fibers. D: general view of the alginate-treated felt. E: fiber embedded in the silica matrix. F: silicified graphite felt.



ESI-2: FTIR spectra of untreated graphite felt (A), glycerol (B), sodium alginate (C) and alginate-deposited felt (D).



ESI-3: Scheme (left) and picture (right) of the montage used for the cyclic voltammetry experiments on gelified felt. Gel 1 and 3 were gels without glucose during these experiments. The samples were kept at room temperature for several days, in absence of supernatant. Degassed phosphate buffer (electrolyte) were added minutes before the measurement, and the platinum electrode was connected.



ESI-4: Second cycles of cyclic voltammograms realized on cellularized grafted graphite felt in absence (top) or in presence (bottom) of glucose ( $3.2 \text{ mmol.L}^{-1}$ ). First cycles are represented in dashed lines as a reminder.



ESI-5: Scheme (left) and picture (right) of a H-type microbial fuel cell realized with gelified felt. Anode volume is 240 cm<sup>3</sup>.