Supporting Information for

Hydrogel electrodeposition based on bipolar electrochemistry

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Fig. S1 Schematic representation of the bipolar system: (A) Electrochemical reaction and (B) Potential. E_{elec} indicates the equilibrium potential. Because the electrode is a conductor, E_{elec} is the same everywhere on its surface. ΔE_{elec} is used as driving force for the electrochemical reaction at the anodic and cathodic poles. When the potential is sufficient for water electrolysis at the anodic pole, H⁺ is produced, resulting in the release of Ca²⁺ from the CaCO₃ particles as shown in Fig. 1. Simultaneously, gas bubbles are produced because of water electrolysis at the anodic pole.



Fig. S2 Configuration and geometric parameters for the setup in Fig. 2.



Fig. S3 Geometric parameters for Figs. 3 and 5.



Fig. S4 Geometric parameters for Fig. 6.



Fig. S5 Merged fluorescence images before modification of brightness and contrast in Fig. 7.