

Supplementary Materials

On-chip antifouling gel-integrated microelectrode arrays for in situ high-resolution quantification of Nickel fraction available for bio-uptake in natural waters

Sébastien Creffield¹, Mary-Lou Tercier-Waeber^{1*}, Tanguy Gressard¹, Eric Bakker¹, Nicolas Layglon^{1*}

¹University of Geneva, Sciences II, 30 Quai E.-Ansermet, 1221 Geneva 4, Switzerland

* Corresponding authors: marie-louise.tercier@unige.ch
nicolas.layglon@unige.ch

S.1. Field test area

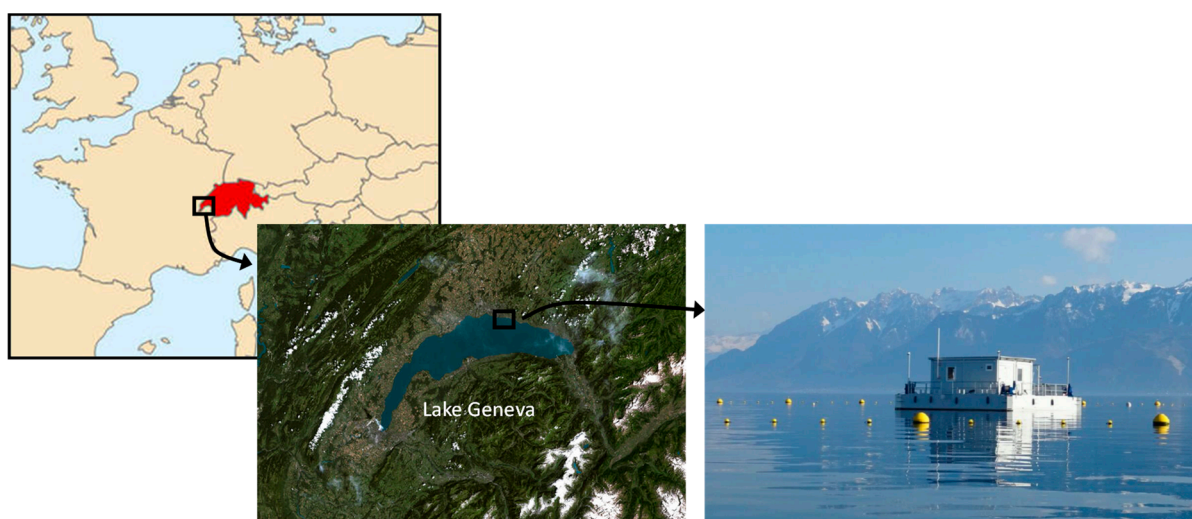


Figure S1: Map of the Lake Geneva associated to a picture of the LeXPLORE platform.

S.2. Ad-SWCSV measurements of the dynamic Ni-nioxime fraction

Table S1 : Summary of the Ad-SWCSV protocol for the determination of the dynamic Ni- and Co-nioxime fractions

External cell Ni and Co Ad-SWCSV protocol	Flow-through cell Ni and Co Ad-SWCSV protocol
<p>Gel equilibration: 300 s</p> <p>SW stripping and background parameters:</p> <ul style="list-style-type: none"> - E initial: -700 mV - E final: -1300 mV - Pulse amplitude: 25 mV - Step amplitude: 4 mV - Frequency: 200 Hz <p>CELL: On</p> <p>Cleaning: E = -1200 mV; t = 30s</p> <p>Preconc.: E = -700 mV; t = 90s</p> <p>Equilibration: E = -700 mV; t = 10s</p> <p>Stripping measurement</p> <p>Cleaning: E = -1200 mV; t = 30s</p> <p>Equilibration: E = -700 mV; t = 10s</p> <p>Background measurement</p> <p>CELL: OFF</p> <p>Data storage (internal memory) and transfer (computer)</p> <p>SW stripping and background parameters:</p> <ul style="list-style-type: none"> - E initial: -1200 mV - E final: -200 mV - Pulse amplitude: 25 mV - Step amplitude: 8 mV - Frequency: 200 Hz <p>CELL: On</p> <p>Cleaning: E = -100 mV; t = 60s</p> <p>Preconc.: E = -1200 mV; t = 120s</p> <p>Equilibration: E = -1200 mV; t = 60s</p> <p>Stripping measurement</p> <p>Cleaning: E = -100 mV; t = 60s</p> <p>Equilibration: E = -1200 mV; t = 60s</p> <p>Background measurement</p> <p>CELL: OFF</p> <p>Data storage (internal memory) and transfer (computer)</p>	<p>Pump on: 180 s</p> <p>Gel equilibration: 300 s</p> <p>Pump on: 30s</p> <p>SW stripping and background parameters:</p> <ul style="list-style-type: none"> - E initial: -700 mV - E final: -1300 mV - Pulse amplitude: 25 mV - Step amplitude: 4 mV - Frequency: 200 Hz <p>CELL: On</p> <p>Cleaning: E = -1200 mV; t = 30 s</p> <p>Preconc.: E = -700 mV; t = 90s</p> <p>Equilibration: E = -700 mV; t = 10s</p> <p>Stripping measurement</p> <p>Cleaning: E = -1150 mV; t = 30s</p> <p>Equilibration: E = -700 mV; t = 10s</p> <p>Background measurement</p> <p>CELL: OFF</p> <p>Data storage (internal memory) and transfer (computer)</p> <p>SW stripping and background parameters:</p> <ul style="list-style-type: none"> - E initial: -1200 mV - E final: -200 mV - Pulse amplitude: 25 mV - Step amplitude: 8 mV - Frequency: 200 Hz <p>CELL: On</p> <p>Cleaning: E = -100 mV; t = 60s</p> <p>Preconc.: E = -1200 mV; t = 120s</p> <p>Equilibration: E = -1200 mV; t = 60s</p> <p>Stripping measurement</p> <p>Cleaning: E = -100 mV; t = 60s</p> <p>Equilibration: E = -1200 mV; t = 60s</p> <p>Background measurement</p> <p>CELL: OFF</p> <p>Data storage (internal memory) and transfer (computer)</p>