

SUPPORTING INFORMATION

A Sustainable Colloidal-Silver-Impregnated Ceramic Filter for Point-of-Use Water Treatment

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The following is the list of additional supporting materials for the article:

Table S2-S2. Particle size, specific surface area, and predominant clay mineral for Guatemalan, Redart, and Mexican soils used to fabricate ceramic filters.

Table S3-S3. Colloidal silver masses applied to and retained by ceramic filters manufactured using each of three types of soil samples. Data are presented for both painted and submerged ceramic filters.

Figure S4-S4. Effluent [^3H]H₂O concentrations normalized to the influent pulse concentration as a function of time for ceramic filters, without silver impregnation, fabricated with Redart, Guatemalan, and Mexican soils. Solid lines represent optimized solute-transport model fits.

Figure S5-S5. Silver concentrations in effluent water from painted ceramic filters as a function of time.

Table S2-S2. Particle size, specific surface area, and predominant clay mineral for Guatemalan, Redart, and Mexican soils used to fabricate ceramic filters.

	Guatemala	Redart	Mexico
Particle size (%)			
< 2 μm	10.1	30.7	13.6
2-20 μm	58.7	54.9	27.5
> 20 μm	31.2	14.4	58.9
Surface area (m^2/g)	19.23	52.19	17.94
Predominant mineral	Illite	Illite/kaolinite	Mixed-layer material

Table S3-S3. Colloidal silver masses applied to and retained by ceramic filters manufactured using each of three types of soil samples. Data are presented for both painted and submerged ceramic filters.

	Guatemala	Redart	Mexico
Painted ceramic filters			
Total mass applied (mg colloidal silver/g)	0.035	0.037	0.033
Mass after saturation period (mg colloidal silver/g)	0.028	0.036	0.029
Submerged ceramic filters			
Total mass applied (mg colloidal silver/g)	0.26	0.25	0.26
Mass after saturation period (mg colloidal silver/g)	0.208	0.223	0.223

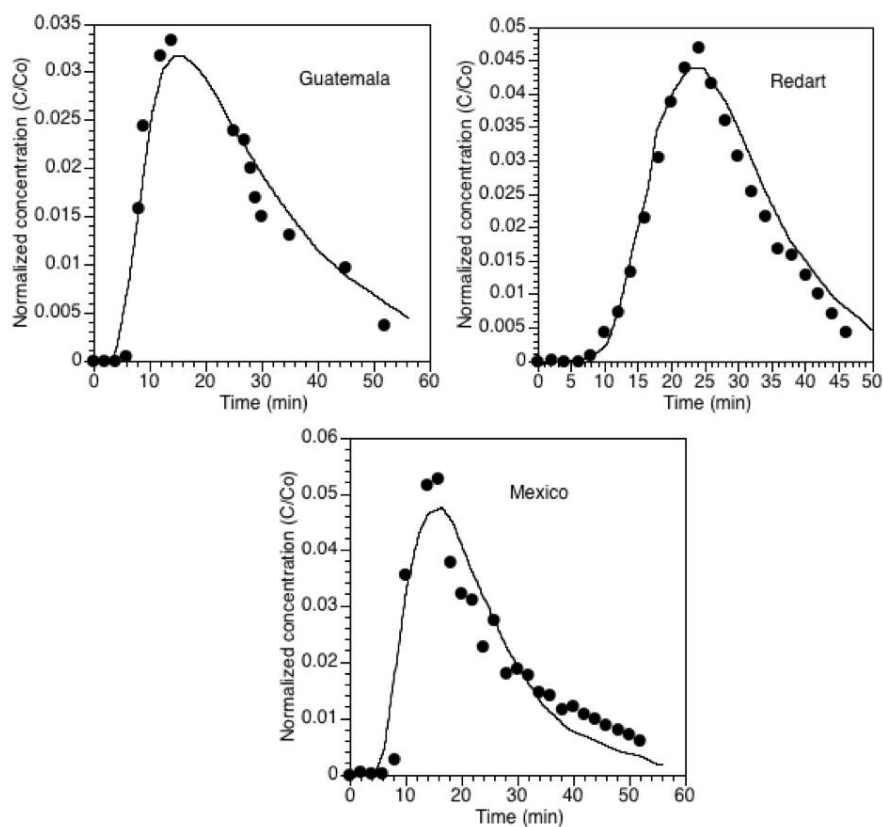


Figure S4-S4. Effluent $[^3\text{H}]\text{H}_2\text{O}$ concentrations normalized to the influent pulse concentration as a function of time for ceramic filters fabricated with Redart, Guatemalan, and Mexican soils. Solid lines represent optimized solute-transport model fits.

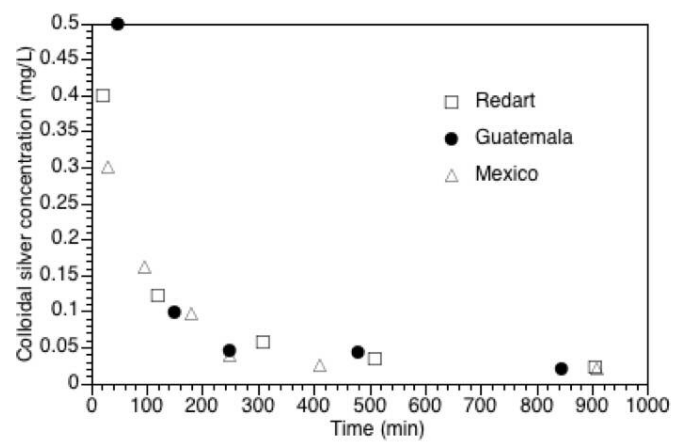


Figure S5-S5. Silver concentrations in effluent water from painted ceramic filters as a function of time.