The Surface Chemistry of Martian Mineral Analogs During Triboelectric Charging in Sand Storms

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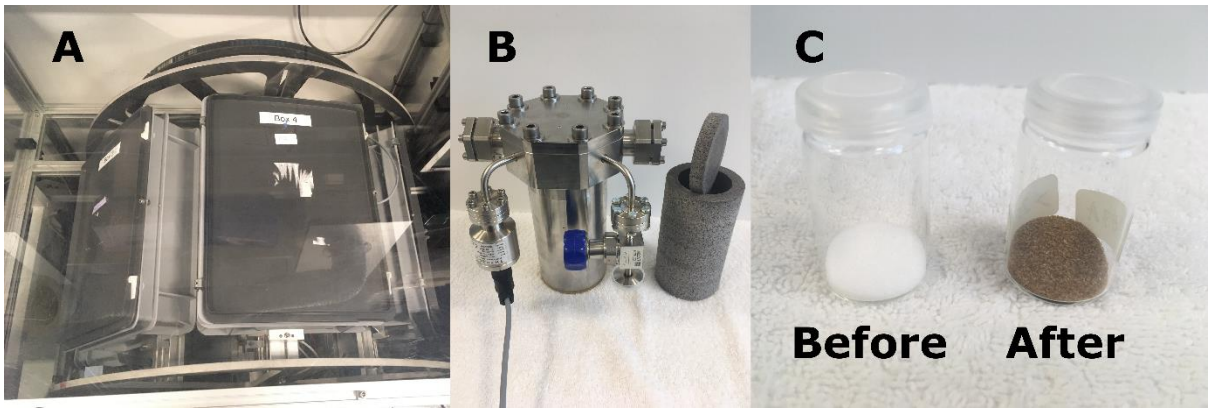

Fig. 1: (A) Picture of the tumbler, which simulates a sand storm by turning the samples end-over-end at 30 rpm. (B) The home-built Mars simulation reactor and the internal cylindrical mineral container made of basalt rock from Gufunes, Iceland. The reactor has a built-in pressure gauge and windows for IR spectroscopy. (C) Quartz mineral sand before and after tumbling in a methane atmosphere for 190 days.