

Supplementary Materials: Cylindrical Free-Standing Mode Triboelectric Generator for Suspension System in Vehicle

Minki Kang, Tae Yun Kim, Wanchul Seung, Jae-Hee Han and Sang-Woo Kim

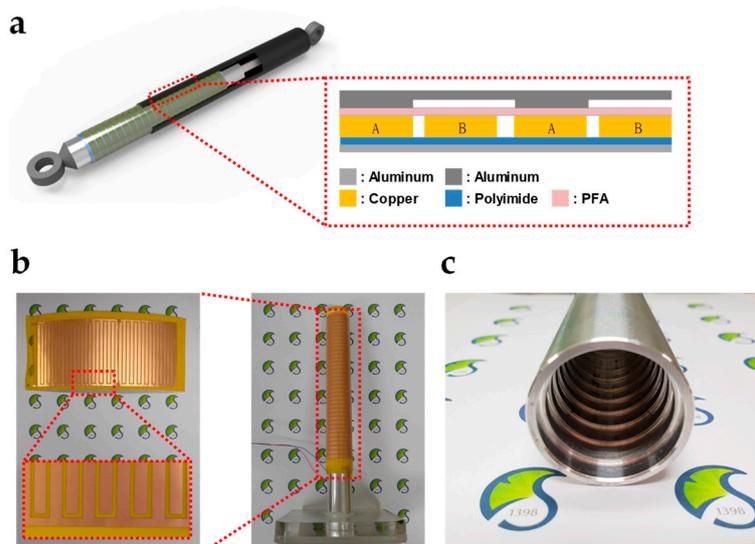


Figure S1. Detailed structure and optical images of STEG: (a) the structure and materials of STEG; (b) optical images of PFA film and copper electrode on the inner cylinder; (c) optical image of the outer cylinder and internal structure.

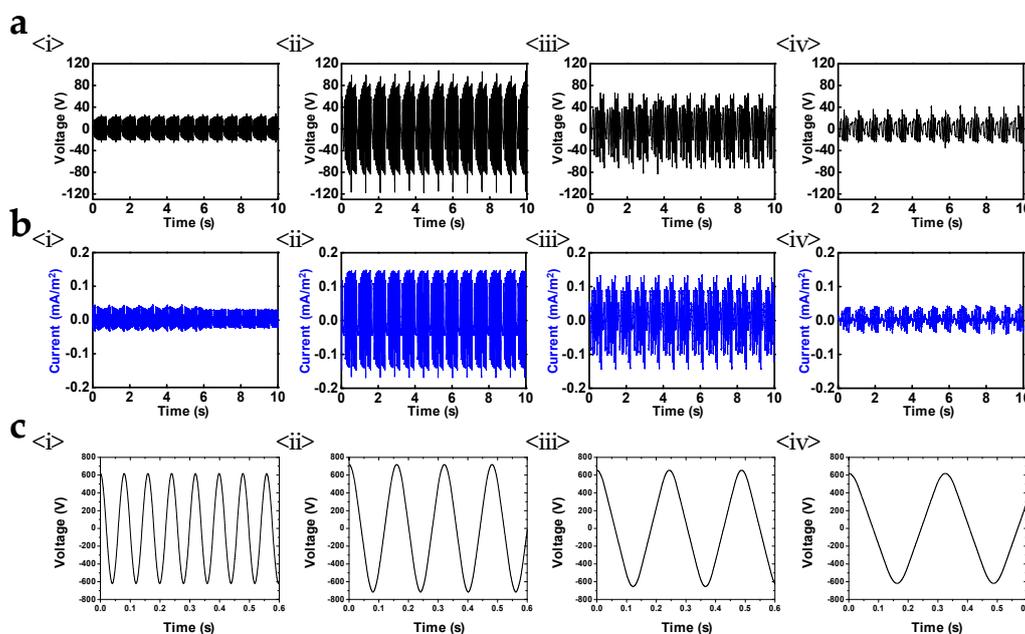


Figure S2. Output performance and COMSOL simulation results versus electrode width: (a) output voltage of STEG; (b) short-circuit current of STEG; (c) COMSOL simulation results for open circuit voltage, resistance was set to 100 MΩ. ((i), (ii), (iii), (iv): results according to electrode width 1, 3, 5, and 7 mm, respectively).

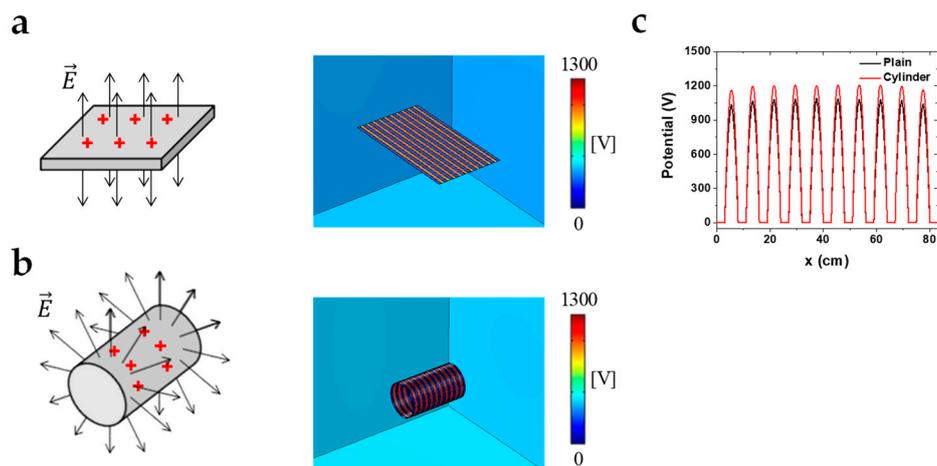


Figure S3. Advantages of cylindrical over planar structure with same charge density and area: (a) electric field and potential on planar surface; (b) electric field and potential on cylinder surface; (c) comparison of open-circuit voltage for each planar and cylindrical model.

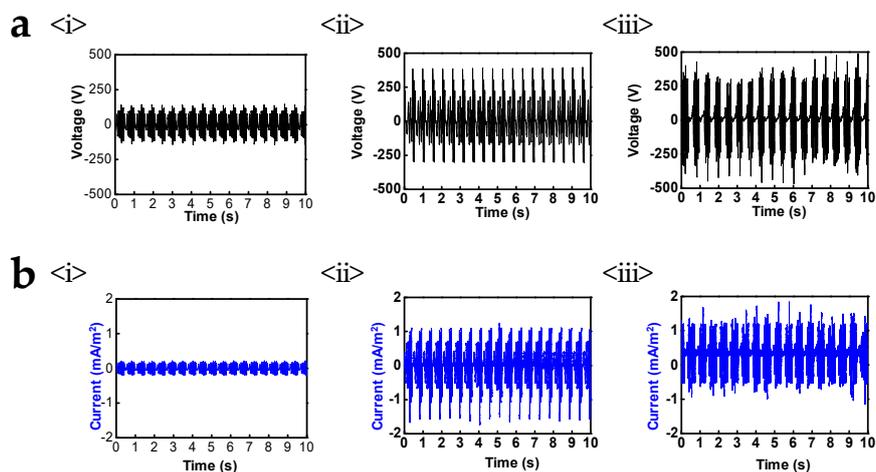


Figure S4. Output performance versus frictional force: (a) output voltage of STEG; (b) short-circuit current of STEG. (i), (ii), and (iii): results according to 0.5, 0.6, and 0.9 kgf.