Supporting Information

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Toward Robust Nanogenerator Using Aluminum Substrate

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Supporting information
(a) Unit cell

- Flat Al foil
- Sandblasting
- Deposition of seed layer
- Growth of ZnO nanowires
- Sequentially coating with p-type and n-type polymers
- Spin-coated PMMA

(b) Parallel and Serial connection

- Large-area NG
- Parallel connection
- Serial connection

Parallel and Serial connected NG
2. Experimental results for durability

When the grown ZnO nanowires based on ZnO seed layer on flat Al surface is bent

<Flat Al foil>
3. Stable output of the sample $C_2$ about pressing and releasing with the frequency of 2 Hz for 20 hr.

Stability test of a serially connected NG. In twenty hours at an impacting frequency of 2 Hz of pressing and releasing of the NG, the output voltage remained practically unchanged.
4. Stable output of the sample $C_2$ depending on the frequency from 2 to 8 Hz.

The output of the NG with the increasing in driving frequency, showing its good stability.
5. Movie depending on walking step.

**Current**

**Voltage**