Supporting Information

Tribovoltaic Effect Promotes Highly Efficient Direct-Current Generator

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Table S1. The open-circuit voltage of different type TENGs based on dynamic Schottky contact

Materials	Open-circuit voltage (V)	Reference
Graphene/Si	0.22	[1]
Stainless steel/Si	0.02	[2]
Carbon Aerogel/Si	2	[3]
Al/PEDOT:PSS	1	[4]
Al/$CsPbBr_3$	3.69	[5]

Table S2. The power density of different type TENGs based on dynamic Schottky contact

Materials	Power density (mW/m^2)	Reference
Al foil/PEDOT:PSS	1.1	[6]
Al alloy/PEDOT:PSS	11.67	[4]
Stainless steel/Si	0.15	[2]
Graphene/Si	50	[1]
Carbon Aerogel/Si	61	[3]
Steel ball/Si	3.7	[7]

Table S3. The short-circuit current and current density of different type TENGs based on dynamic Schottky contact

Contact types	Materials	Short-circuit current (μA)	Current density (A/m^2)	Reference
Block	Al alloy/PEDOT:PSS	309	/	[4]
	Al foil/PEDOT:PSS	2.5	0.025	[6]
	Carbon Aerogel/Si	15	100	[3]
	Cu-G/Si	45	0.775	[8]
	MXene/Si	22	/	[9]
	Graphene/Si	4	40	[1]
	Stainless steel/Si	20	/	[2]
AFM tip	Pt/MoS_2	0.001	10^6	[10]
	Graphite/Si	0.003	210	[11]
Needle	W/WO_3	1.2E-4	1270	[12]
Micro Area	Steel ball/Si	0.03	/	[7]
	$Al/CsPbBr_3$	6	11.46	[5]

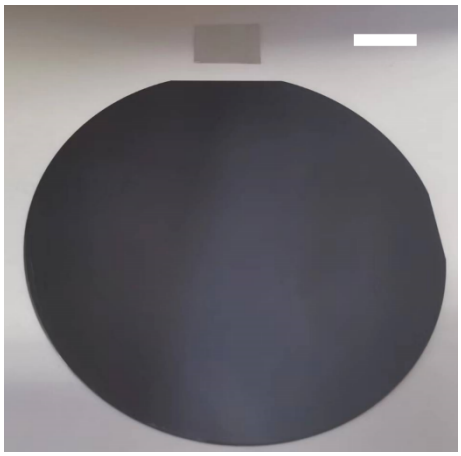

Figure S1. A detailed photograph of Al foil and P-Si with PVP on its

surface (scale bar, 10 mm).

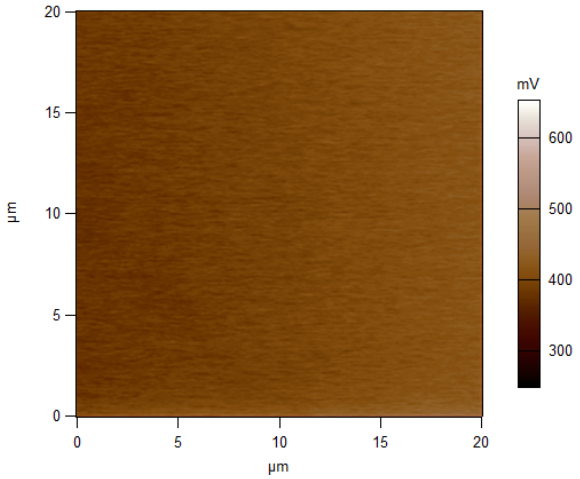

Figure S2. The surface potential of p-Si by the atomic force microscope.

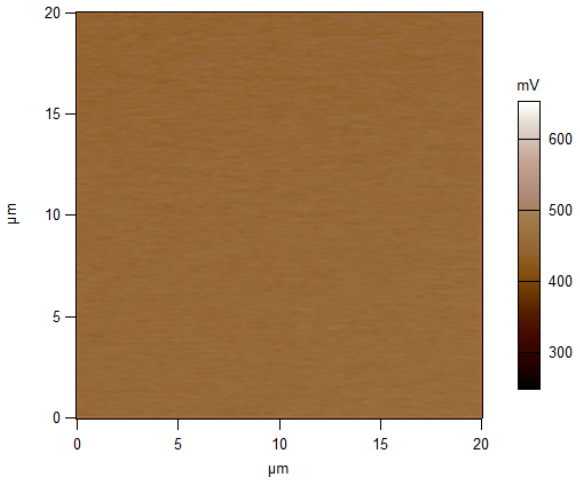

Figure S3. The surface potential of p-Si with PVP on surface by the atomic force microscope.

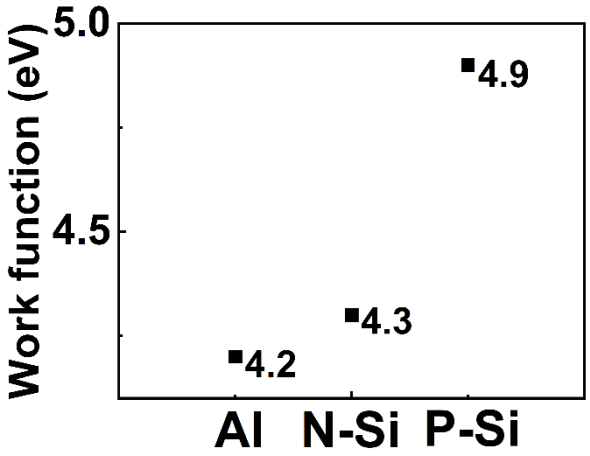

Figure S4. Work function of friction materials.

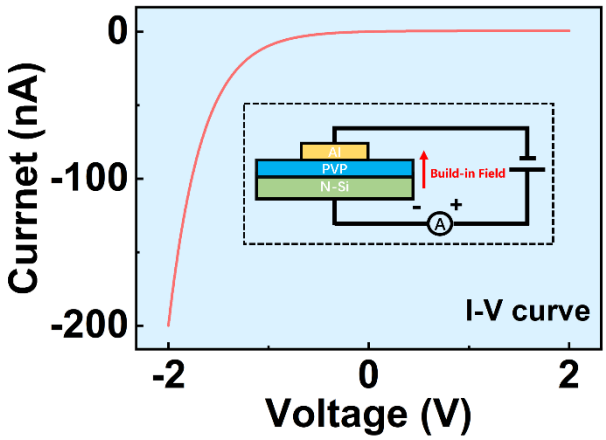

Figure S5. I–V characteristic of the MPS-TENG (n-Si).

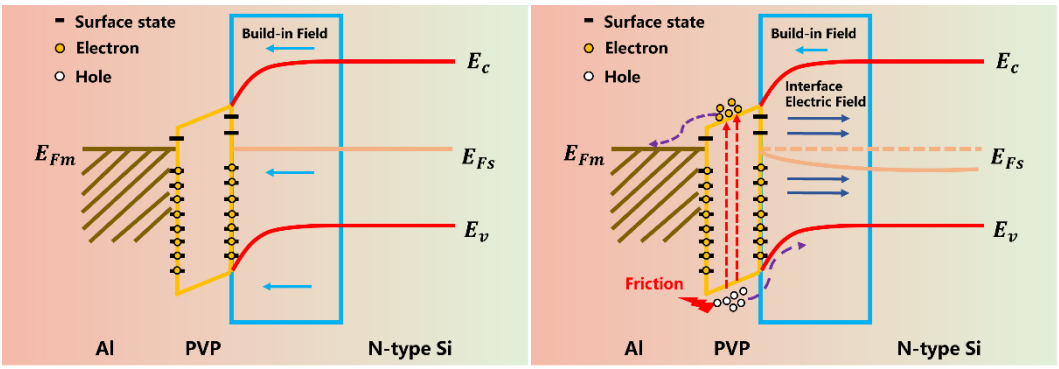

Figure S6. Energy band diagram of the MPS-TENG (n-Si) in static (left) and dynamic (right) states.

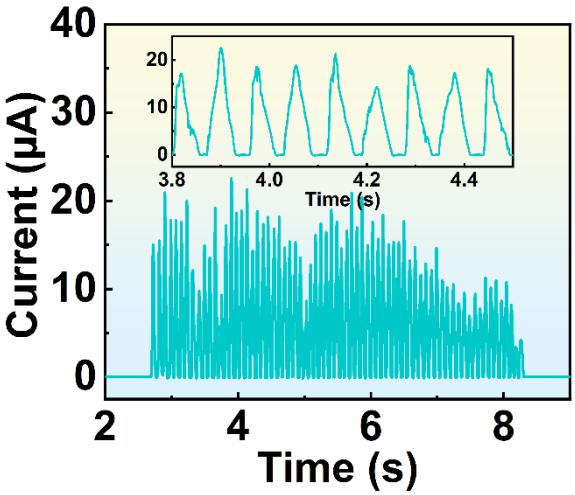

Figure S7. Short-circuit current of the MPS-TENG (p-Si). Inset: Partial magnified view of the current.

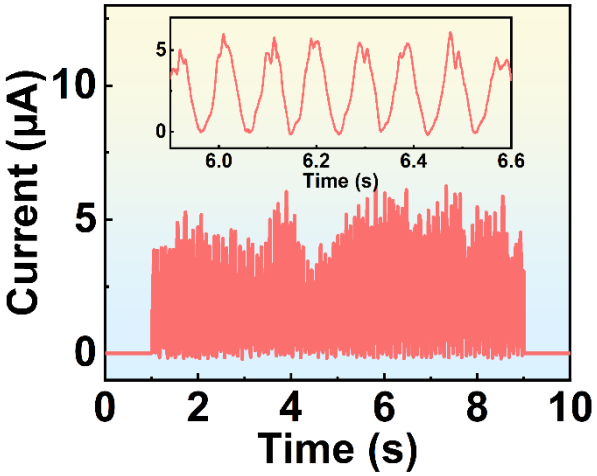

Figure S8. Short-circuit current of the MPS-TENG (n-Si). Inset: Partial magnified view of the current.

References

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