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Electronic Supplementary Information

Exploration of Proton Conduction Behavior in Natural Neutral Polysaccharides for Biodegradable Organic Synaptic Transistors

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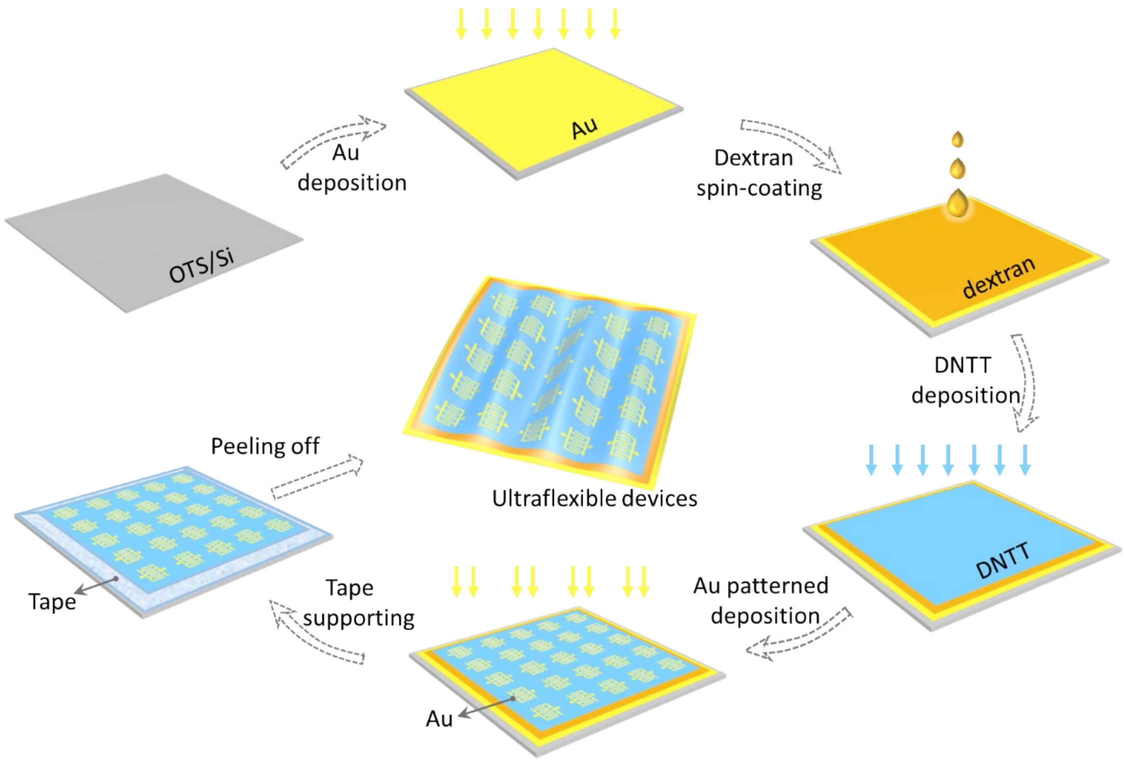

Fig. S1 The fabrication process of large-scale devices.

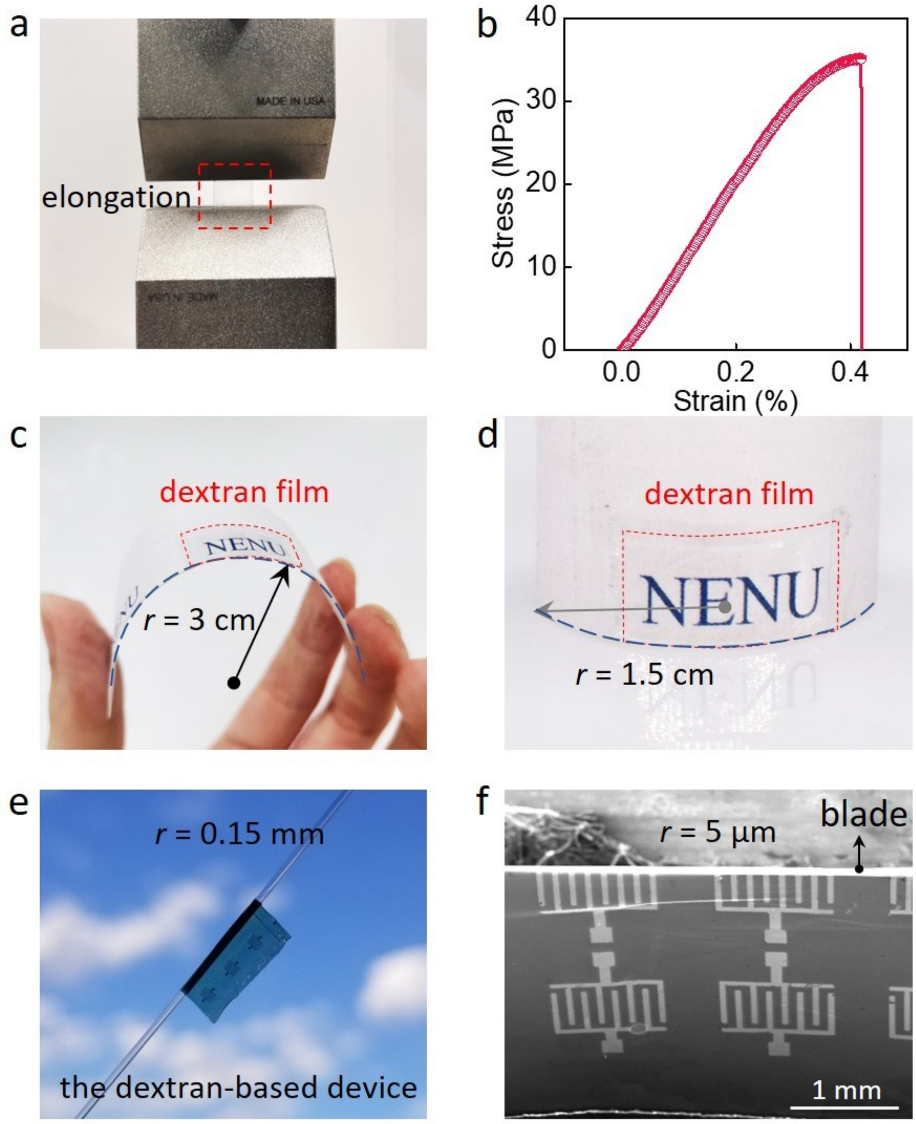

Fig. S2 (a) Photograph of the stretching dextran film. (b) the stress-strain curves of dextran film. Pictures of dextran films at the bending radii of (c) 3 cm and (d) 1.5 cm. Pictures of the dextran-based devices at the bending radii of (e) 0.15 mm and (d) 5 μm.

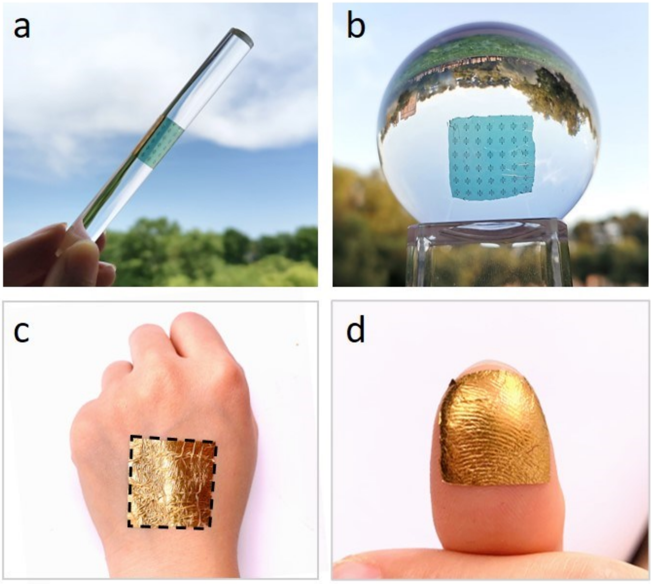

Fig. S3 The conformality of our devices. Pictures of our ultrathin synaptic devices adhered to (a) a glass rod with a radius of 0.5 cm, (b) a glass sphere with a radius of 2.5 cm, (c) the human hand and (d) a human thumb.

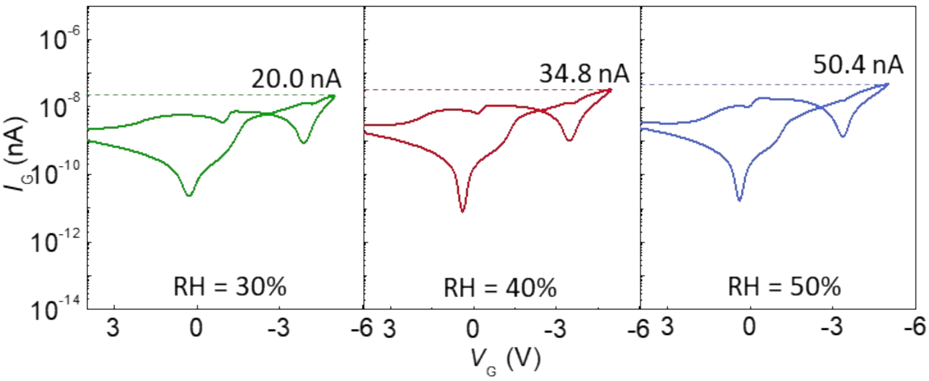

Fig. S4 I_G-V_G curves at different RH of 30%,40% and 50%.

Table S1. Summary of current ultrathin synaptic transistor and representative OTFTs.

	Thickness (nm)	Substrate	Semiconductor	Dielectric layer	Ref.
Synaptic transistors	~509	/	pentacene	PVDF-TrFE	[1]
OTFT	274	PI	DNTT	PI	[2]
OTFT	320	/	pentacene	PS/PAN	[3]
OTFT	350	/	DNTT	PI	[4]
OTFT	470	PAN	pentacene	PPO	[5]
OTFT	620	PI	TIPS-pentacene/N1400	AIO_X	[6]
OTFT	800	cellulose	PDPP-PD	AIO_X	[7]
OTFT	380	/	C8-BTBT	C-PVA	[8]
OTFT	480		TIPS-pentacene	c-PVA:PTA	[9]
OTFT	590		PTCDI-C13	PMMA/PVA	[10]
OTFT	320		C8-BTBT	PVA	[11]

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