

The 16th U.S.-Korea Forum on Nanotechnology

Nanomeshing Adds Multifunctionality to Conventional Neuroelectrodes

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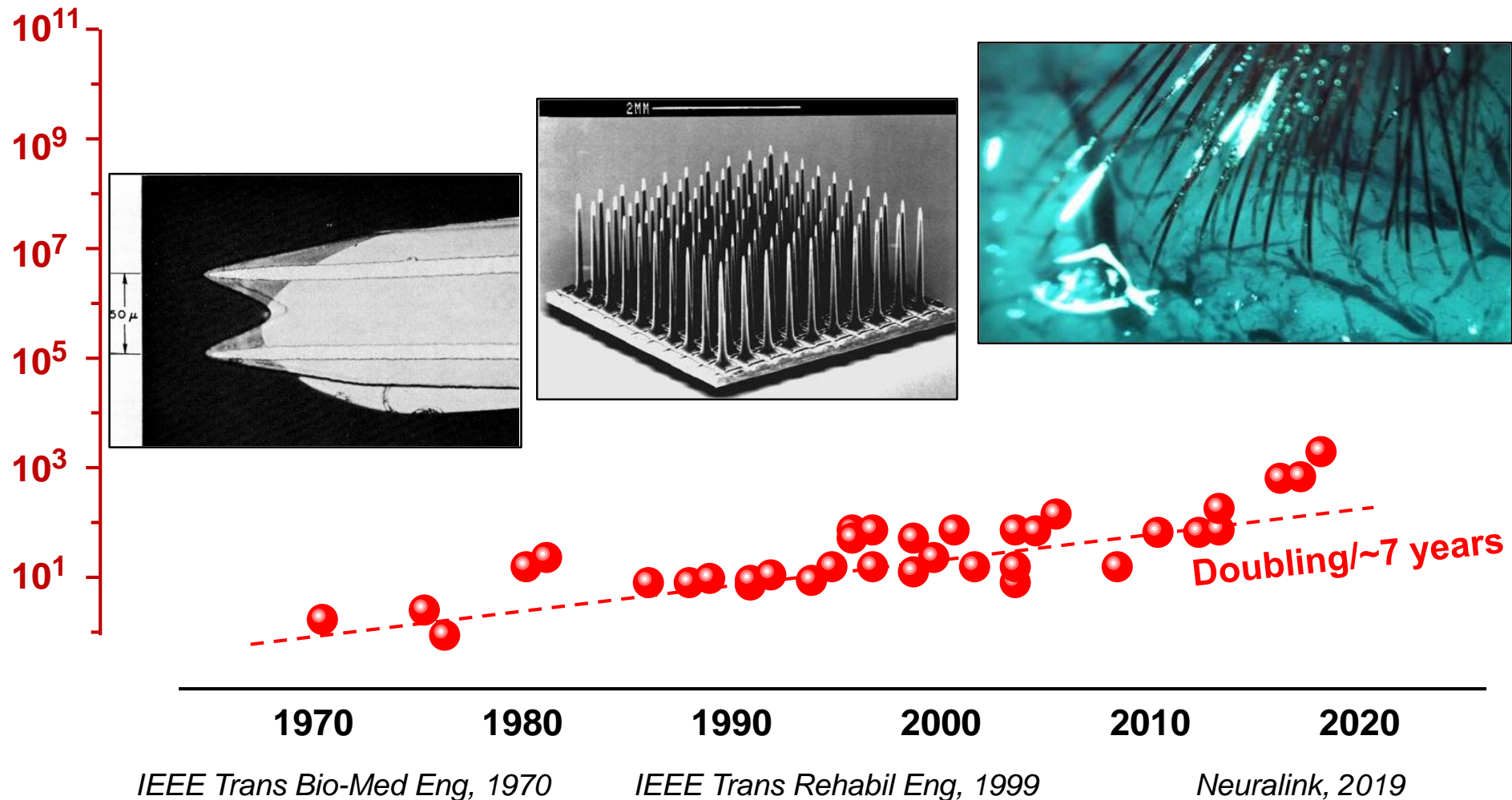
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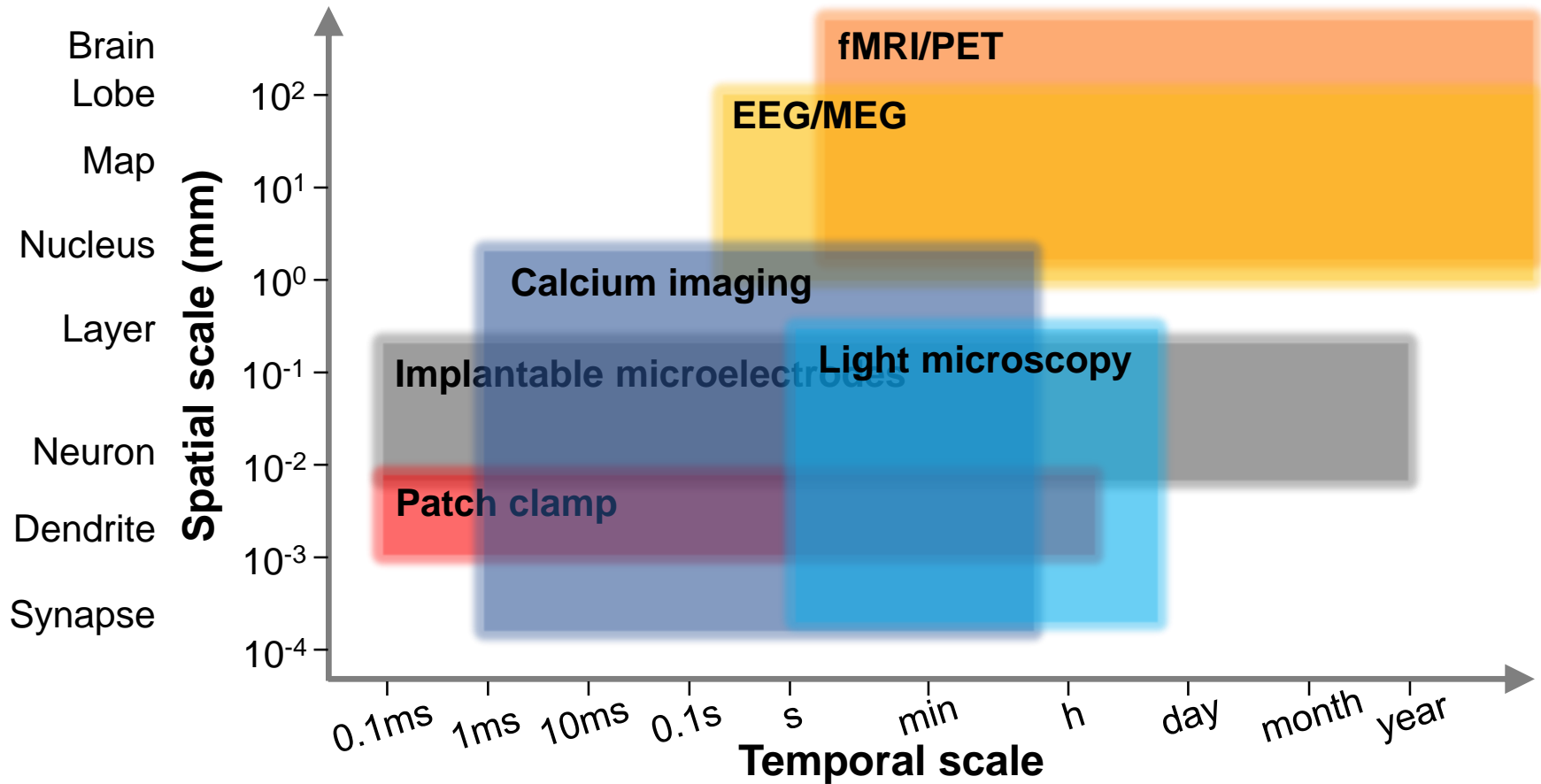


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Biotic/abiotic interface challenges limit the scaling of microelectrode arrays (MEAs)

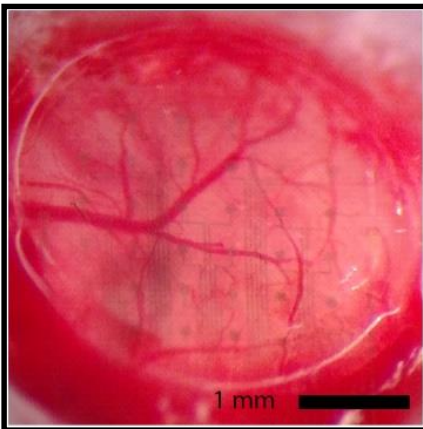


Correspondence problems limit the accurate decoding of brain activity

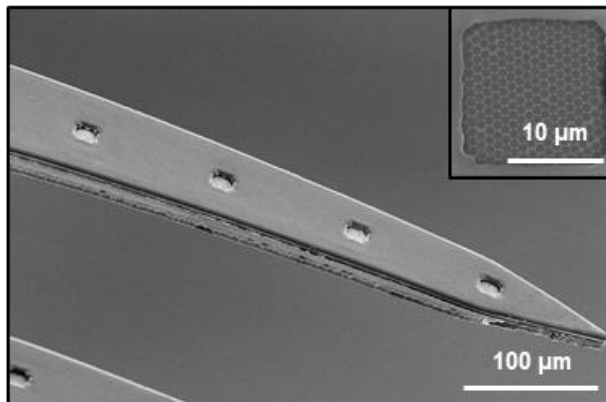
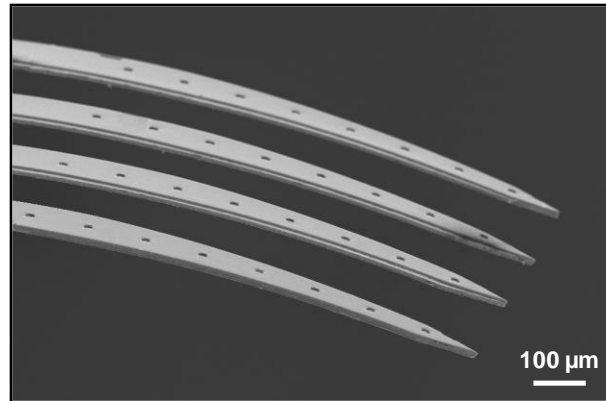


Effectively bridging electrical and optical brain mapping requires transparent MEAs

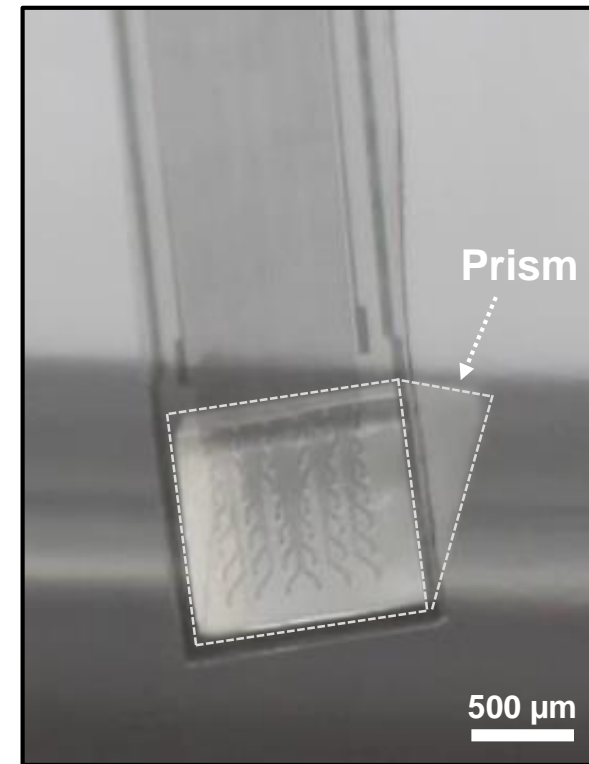
Non-penetrating



Penetrating



On-μPrism

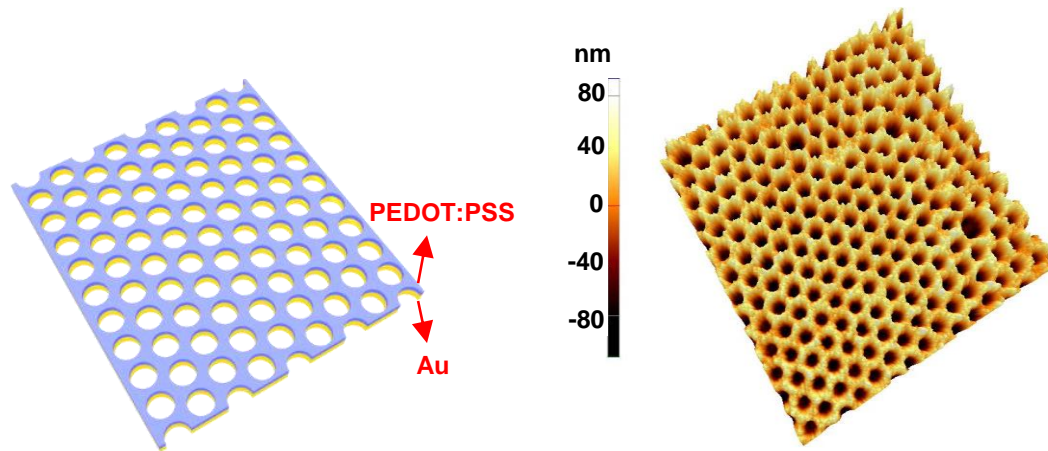


Seo, Fang* *et al.*, *Advanced Biosystems*, 2019
Qiang, Fang* *et al.*, *Science Advances*, 2018

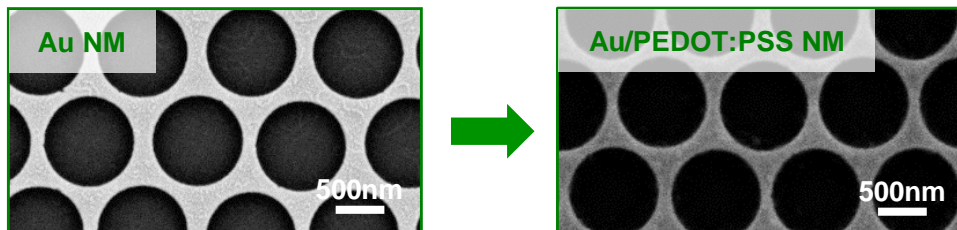
Unpublished

Nanomeshing adds transparency to conventional neuroelectrodes

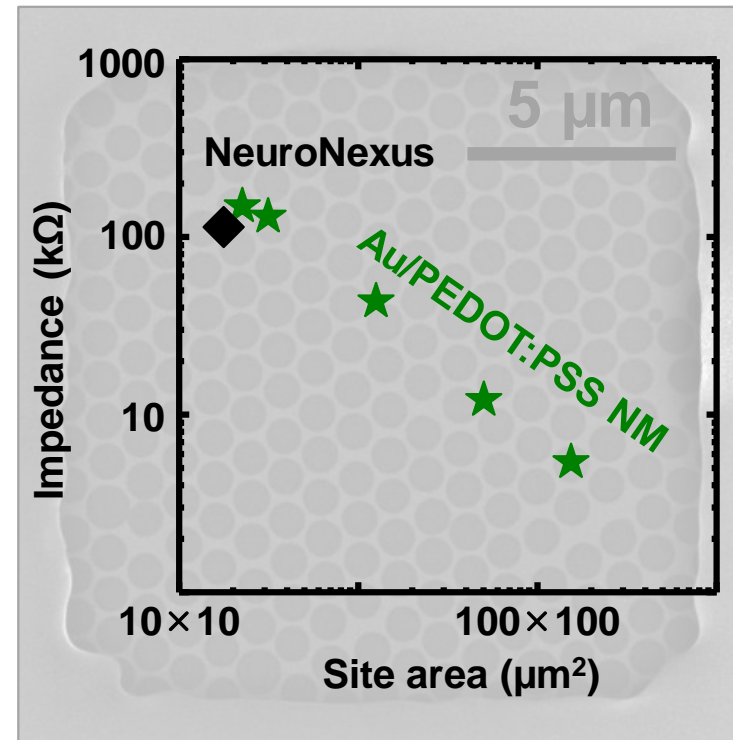
Bilayer Nanomesh



Template electroplating

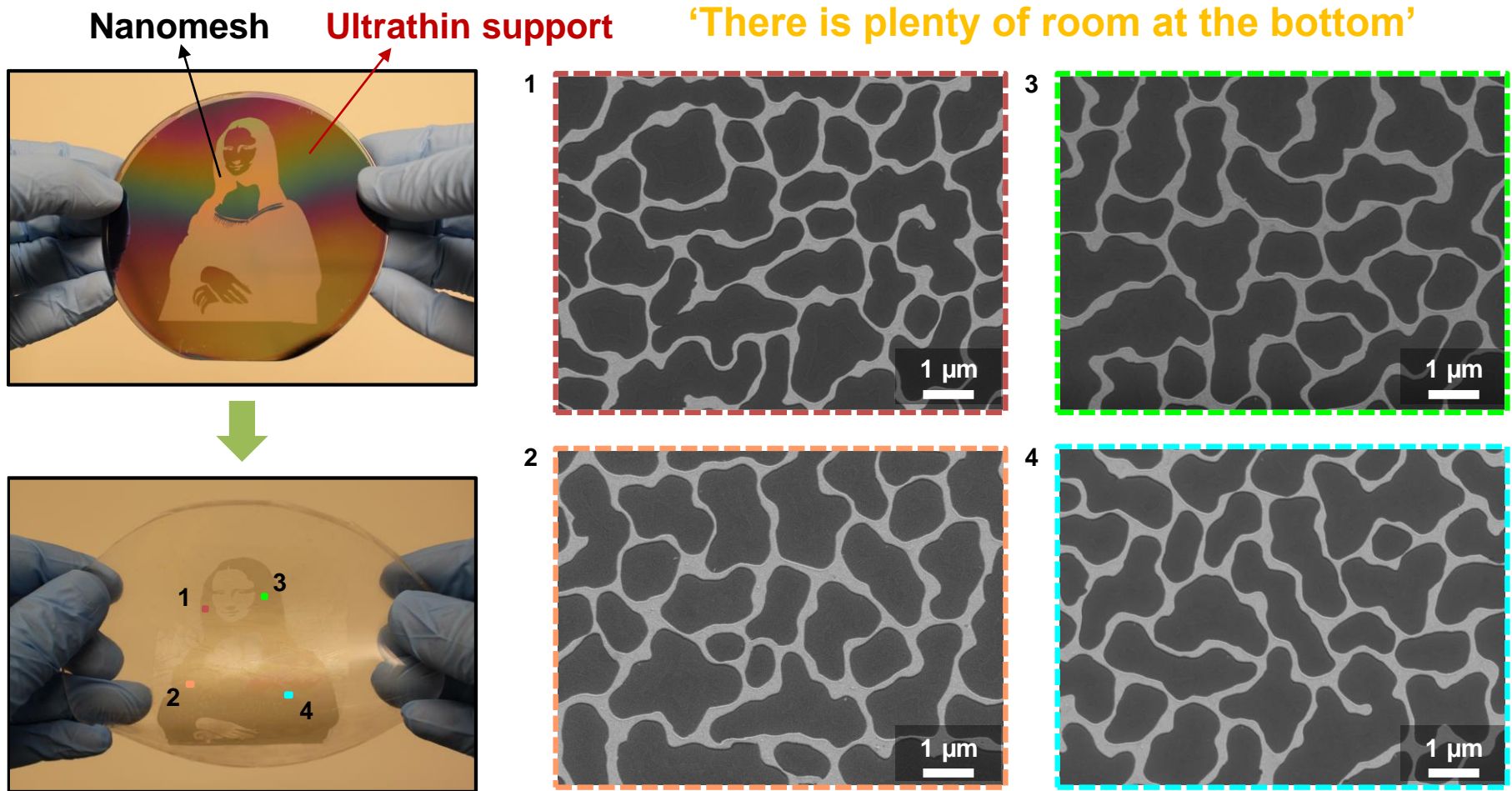


Performance benchmark



Qiang, Fang* et al, *Advanced Functional Materials*, 2017
Seo, Fang* et al, *ACS Nano* 2017

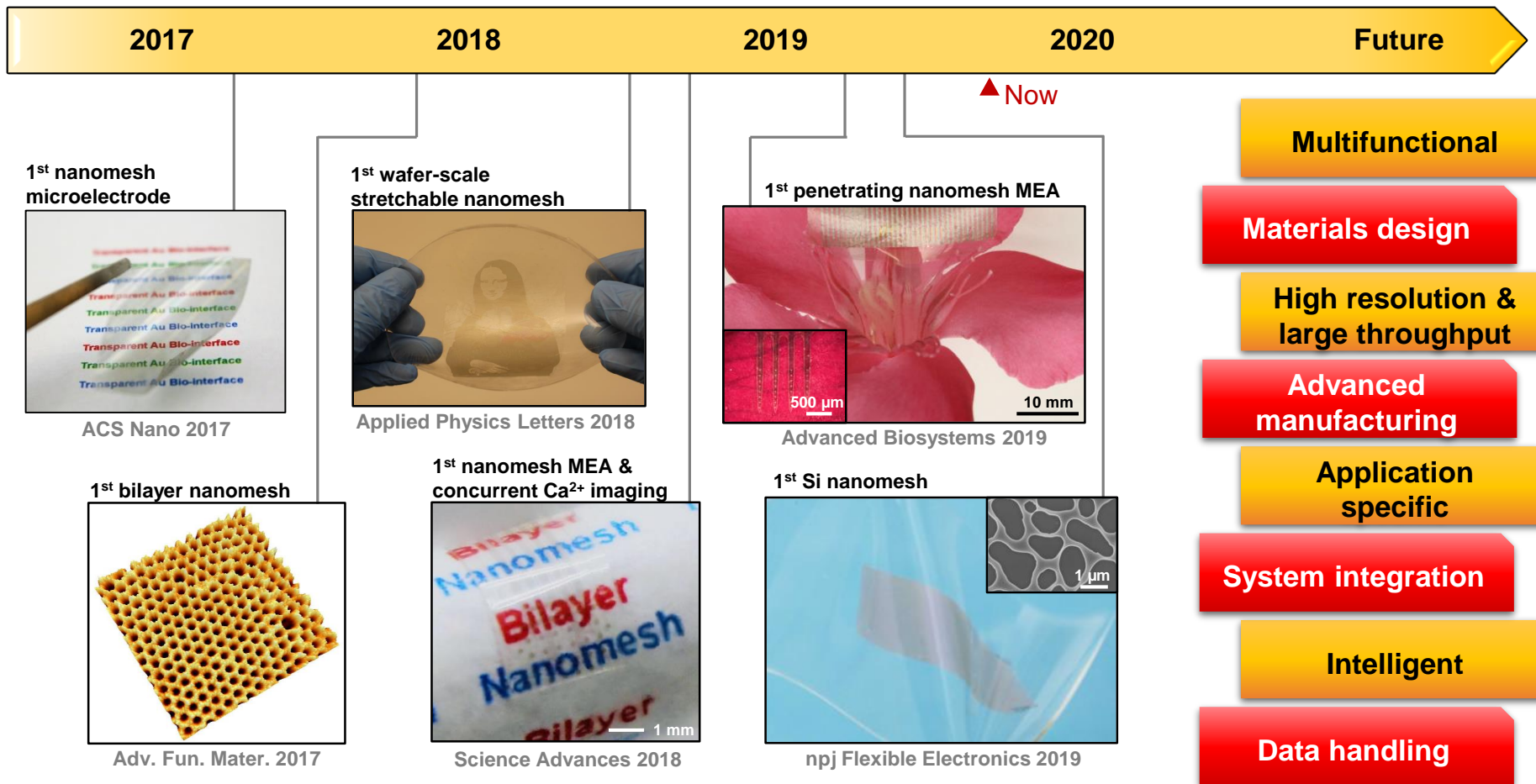
Moving towards stretchable nanomesh to enable ultra-softness



Seo, Fang* et al, *Appl. Phys. Lett.* 2018

Technology roadmap for nanomesh μ bioelectronics

Nanomesh μ Bioelectronics



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Fang Group Members

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- Prof. Dong Feng Chen (MEEI)
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