

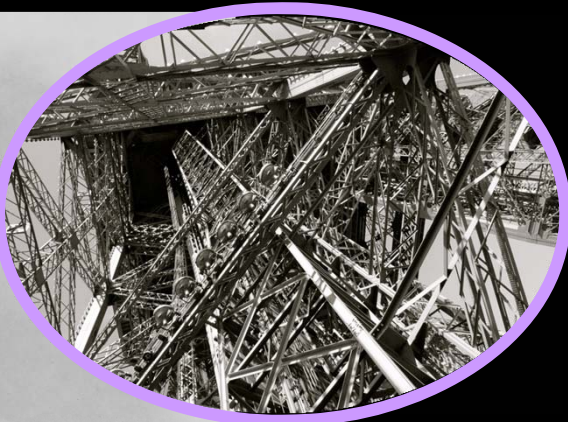
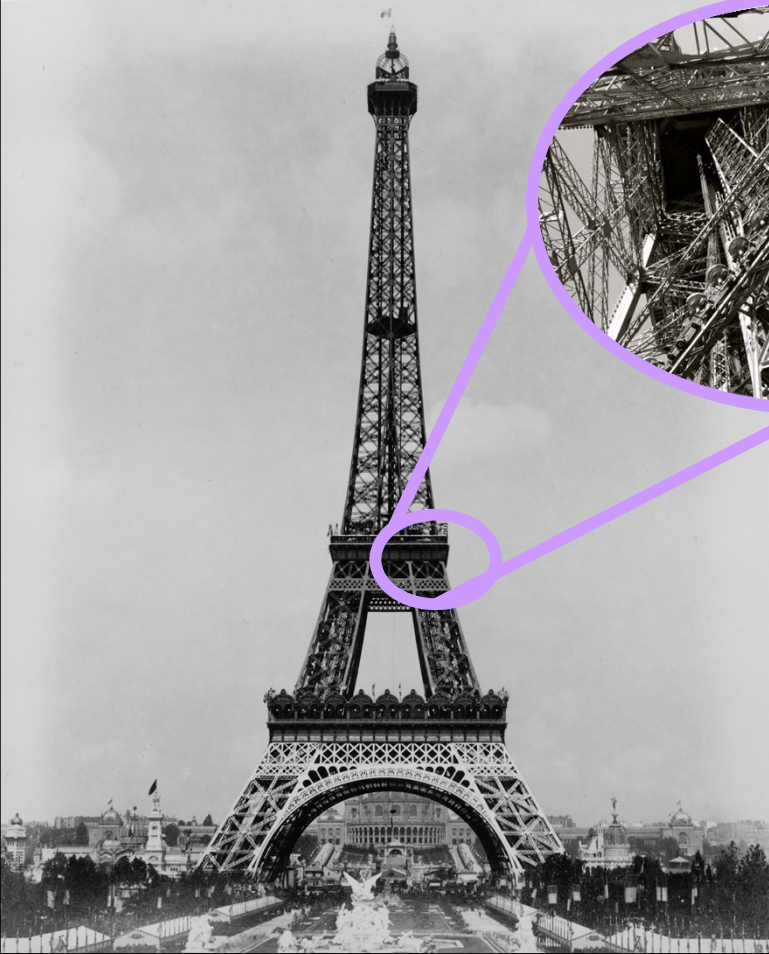
10th US-Korea
Nanoforum

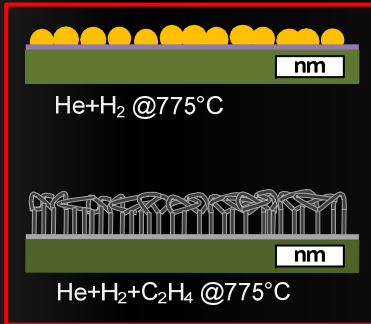
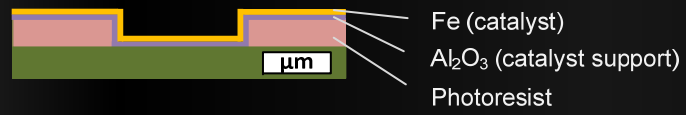
Manufacturing of Ordered Carbon Nanotubes

Sam Tawfick

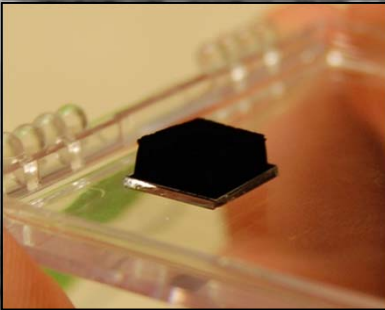
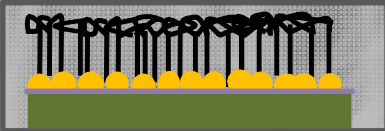
tawfick@illinois.edu | 10/16/2013

Mechanical Science and Engineering
University of Illinois



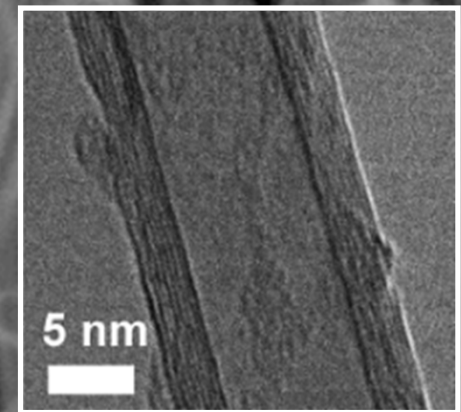


100 μm



Density $\sim 10 \text{ kg/m}^3$

Other properties?



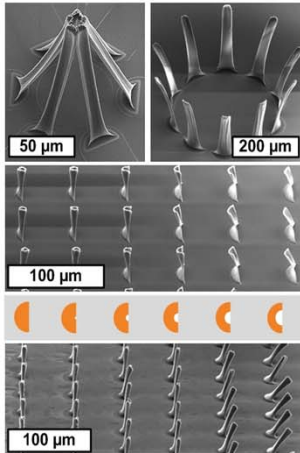
Nessim et al. *Nano Lett* 2008

Acc.V Spot Magn Det WD
5.00 kV 3.0 35000x SE 3.3

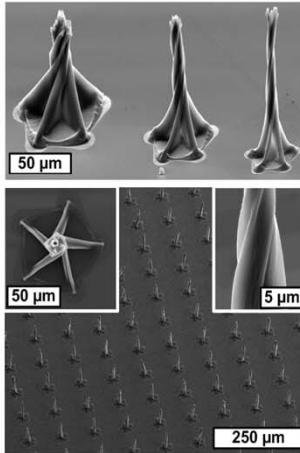
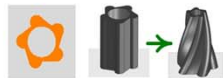
1 μm

Complex shapes and multi-directional textures

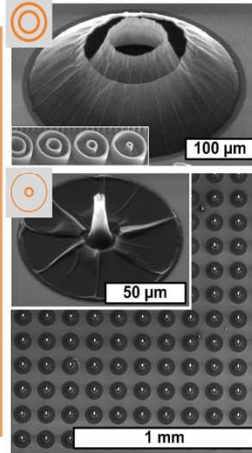
Trusses and flowers



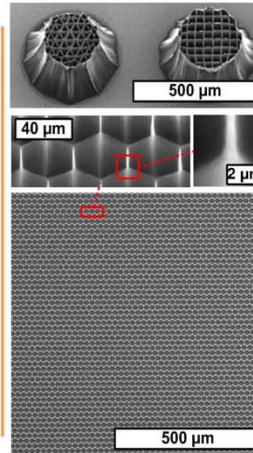
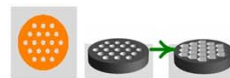
Twists



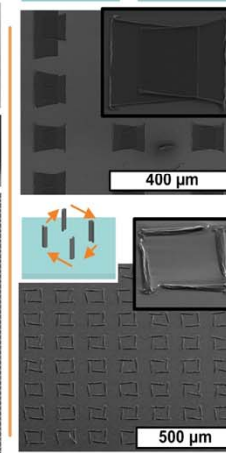
Wells and spires



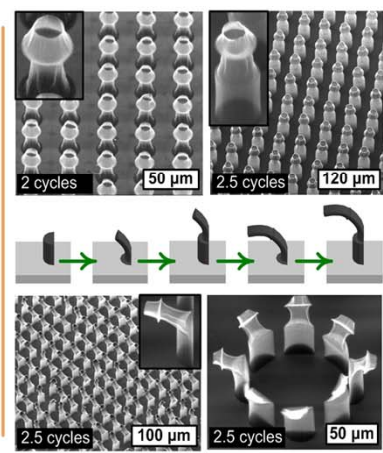
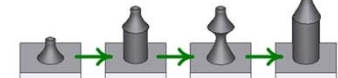
Honeycombs



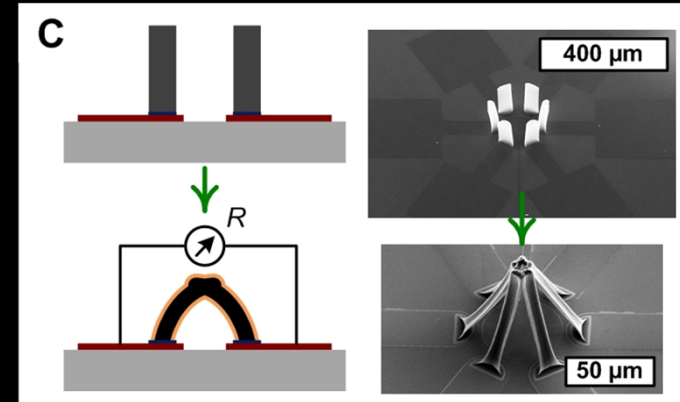
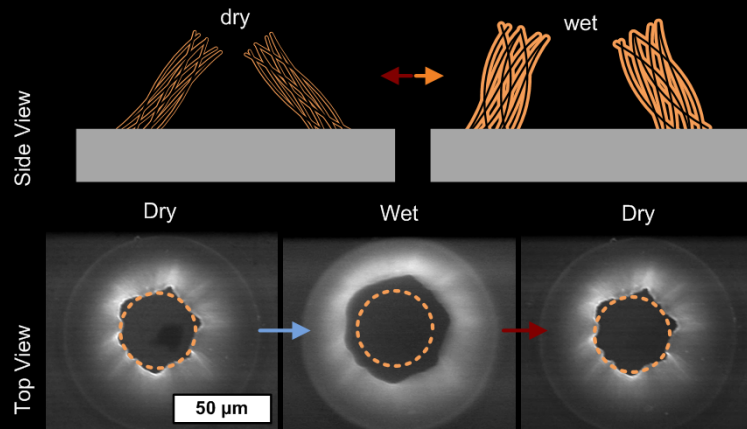
Patches and circuits



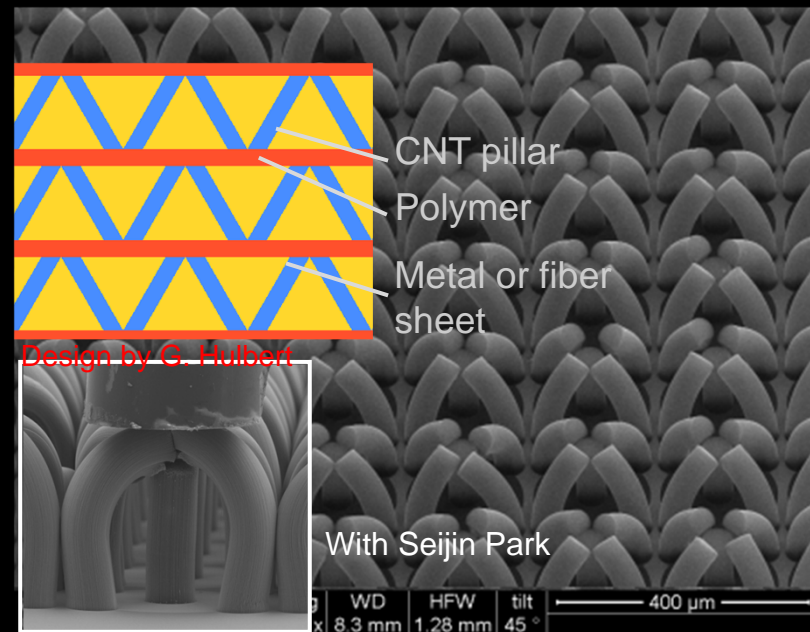
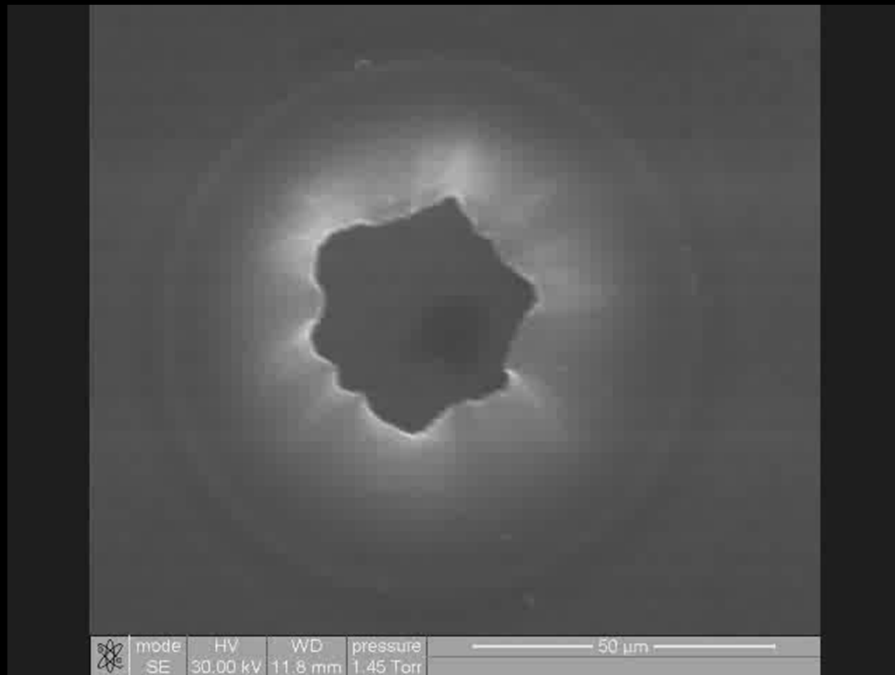
Corrugated tubes and cantilevers



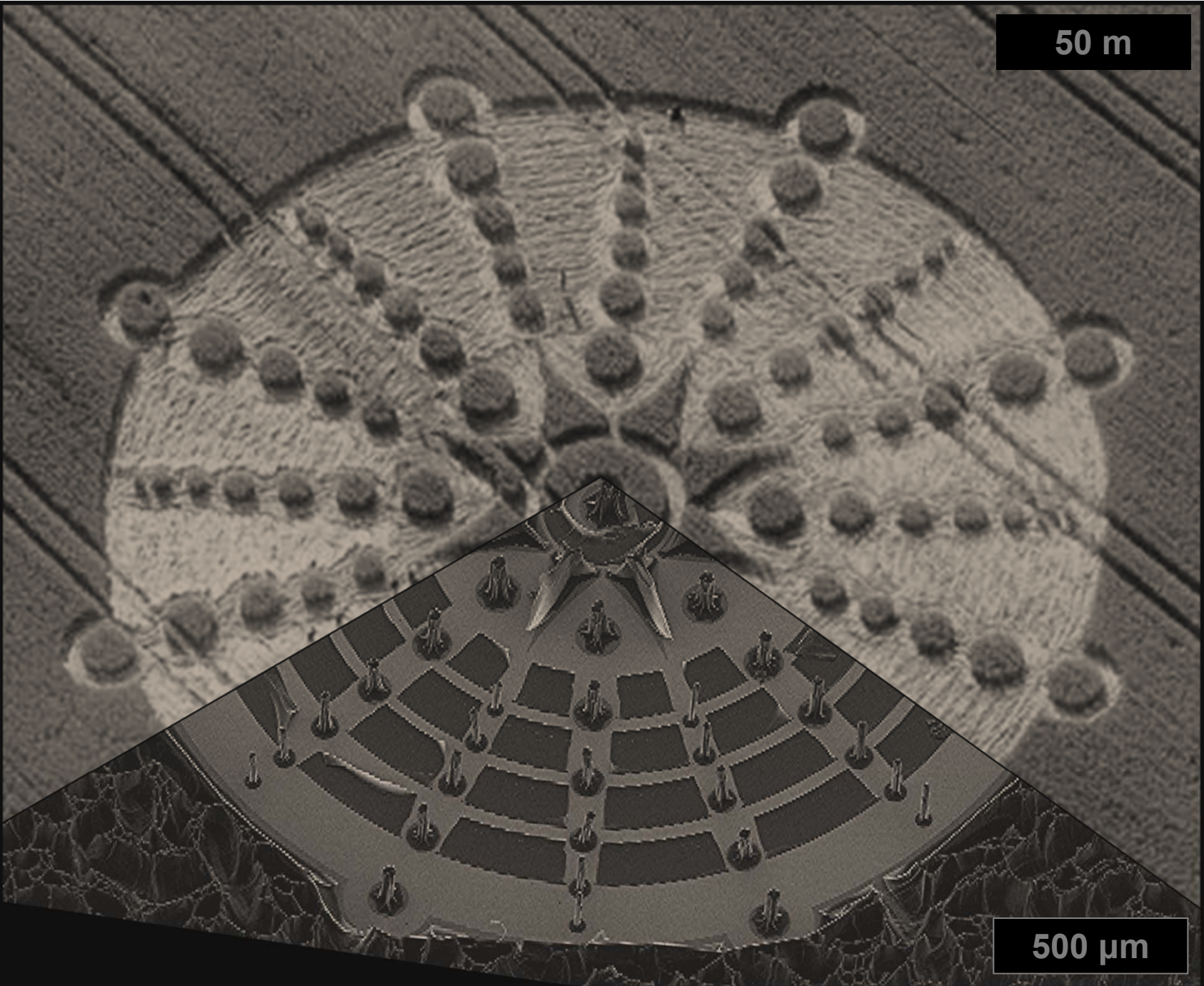
Responsive surfaces and sensors



3D synthesis of μ -Architected composites



50 m



500 μm



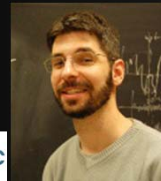
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Abhinav Rao

Capillary forming

Yarns and sheets



Mostafa Bedewy



Eric Meshot



Zhouzhou Zhao



Anna Brieland-Shoultz

X-ray scattering

Modeling and Mechanics

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Dr. Frances Hill (MIT)

Prof. Brian Wardle (MIT)

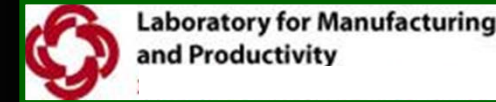
Prof. Wei Lu (UM)

Prof. Joerg Lahann (UM)

Dr. Arthur Woll ((Cornell)



Postdoctoral



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