

Comparing electrical homogeneity in nanoring and nanostick networks

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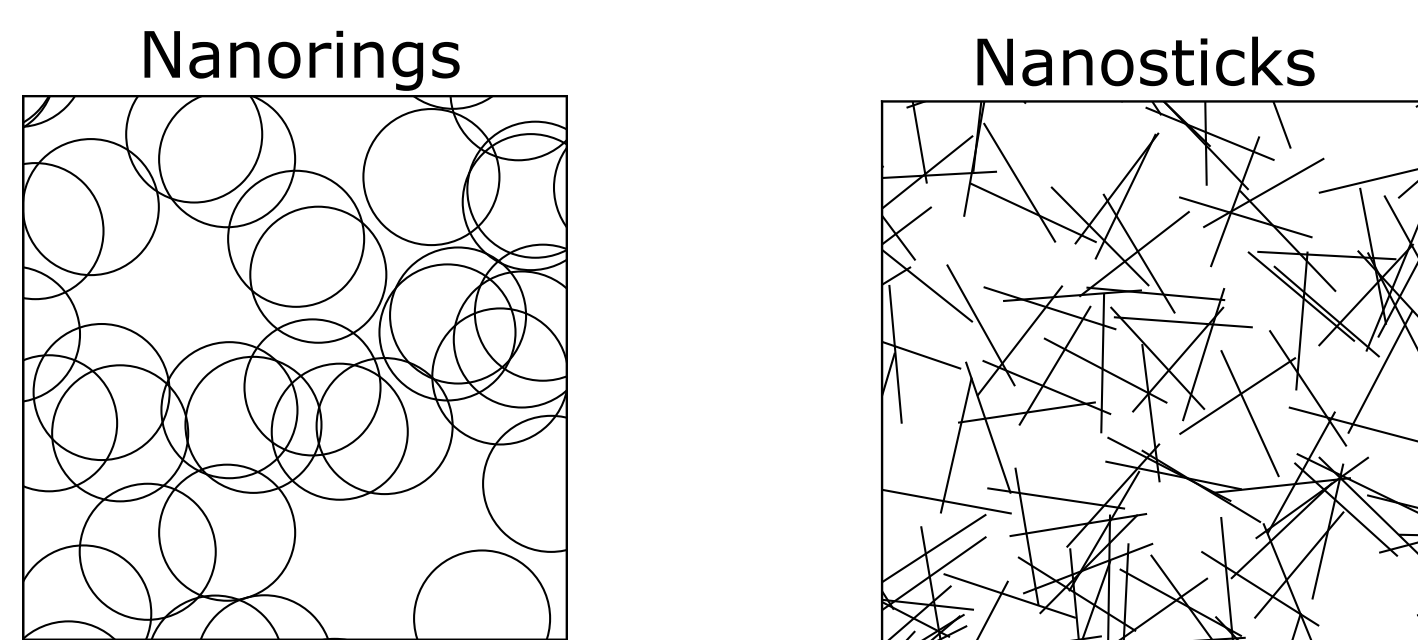
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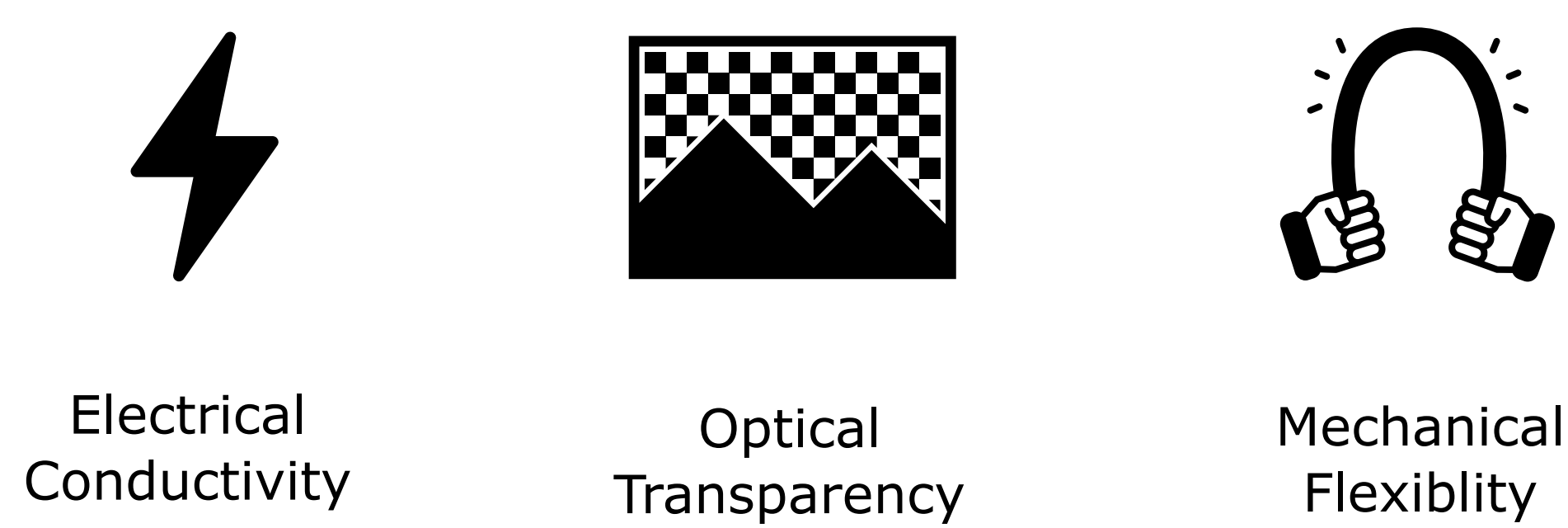
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Nanowire networks: Tiny wires with large impact

Different geometries exist

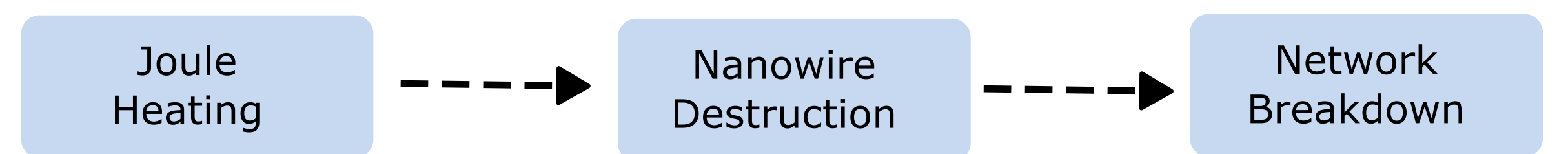
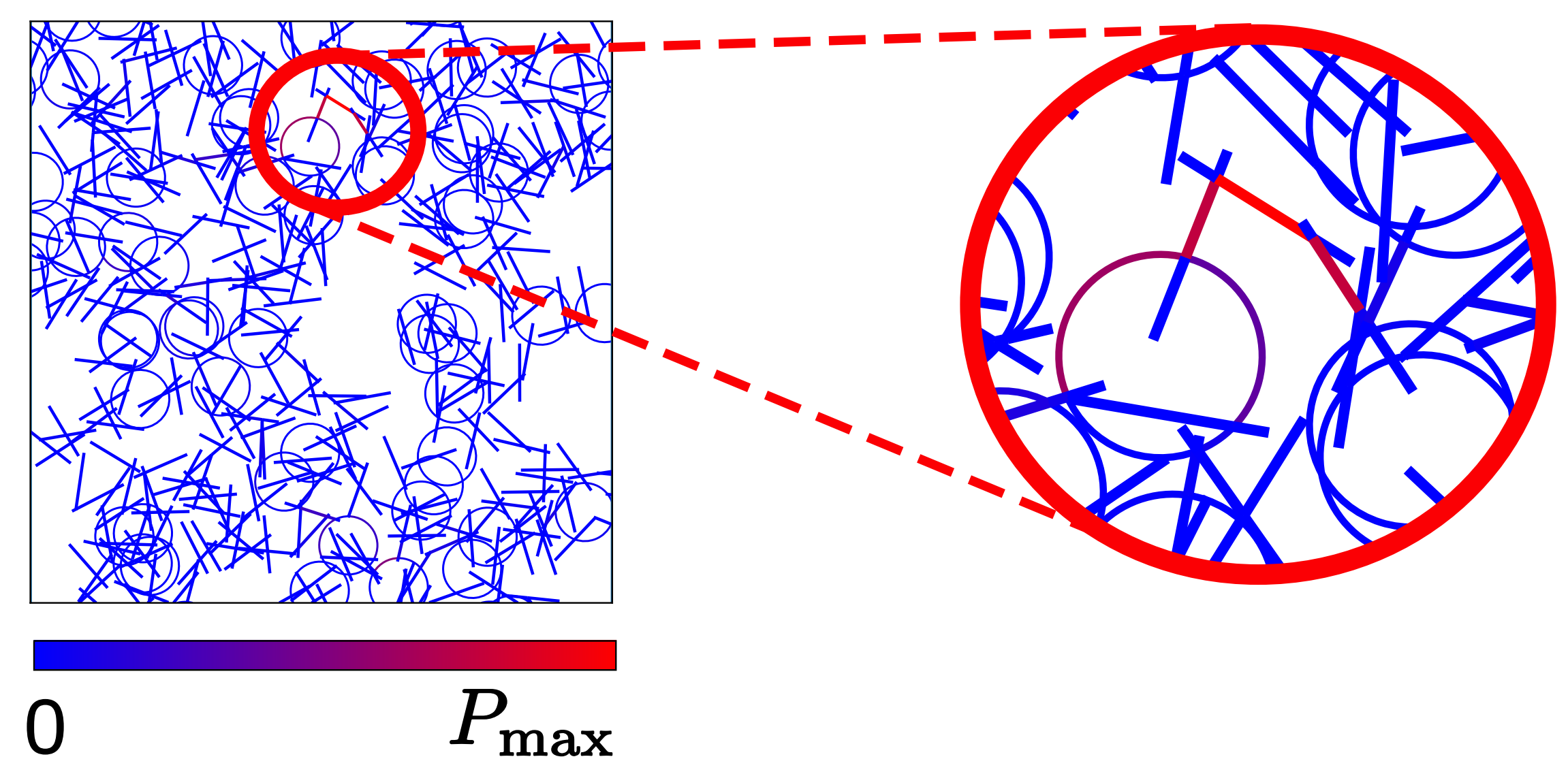


Networks have incredible properties



⇒ Applications!

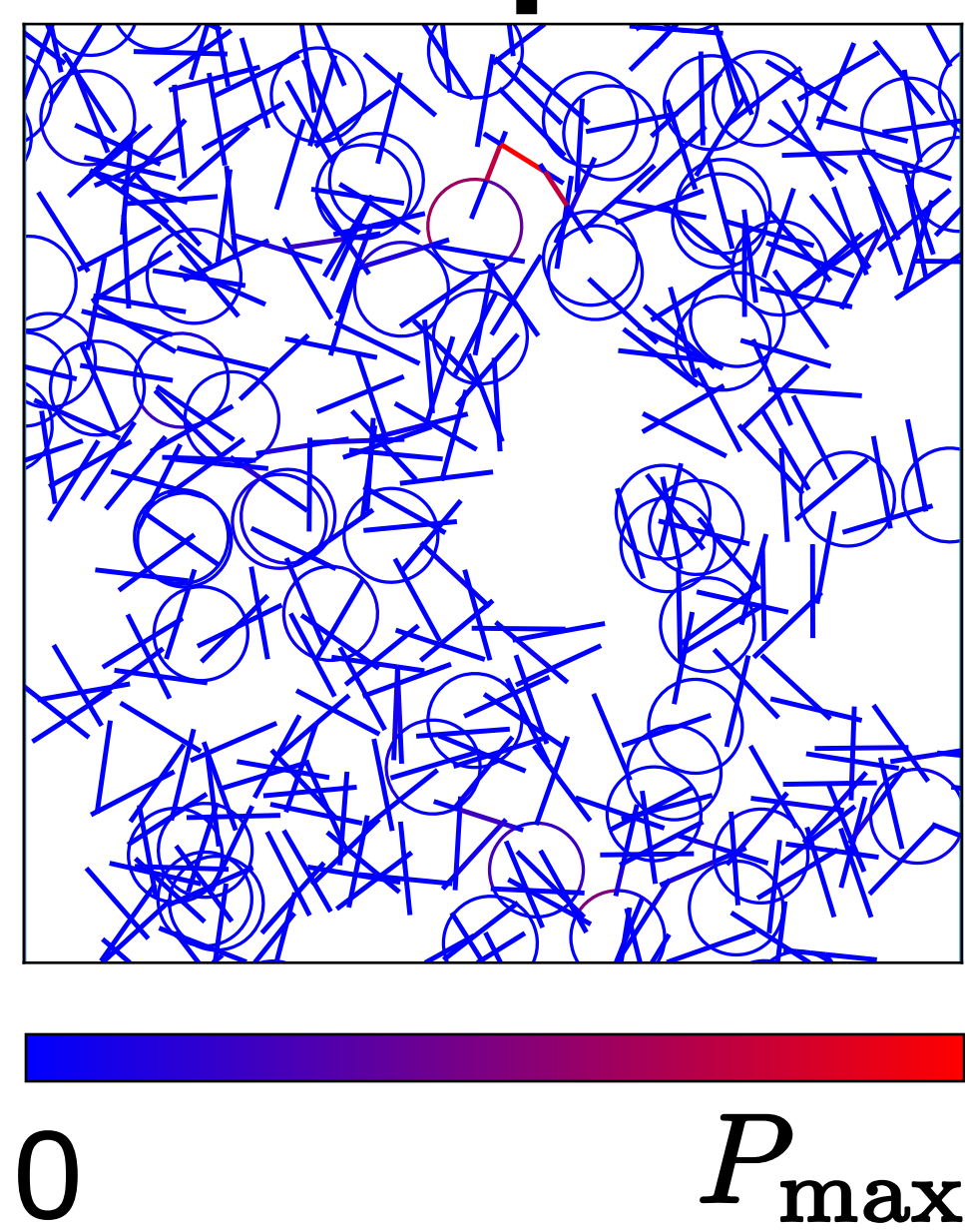
Hotspots cause network failure!



⇒ We need homogeneous networks!

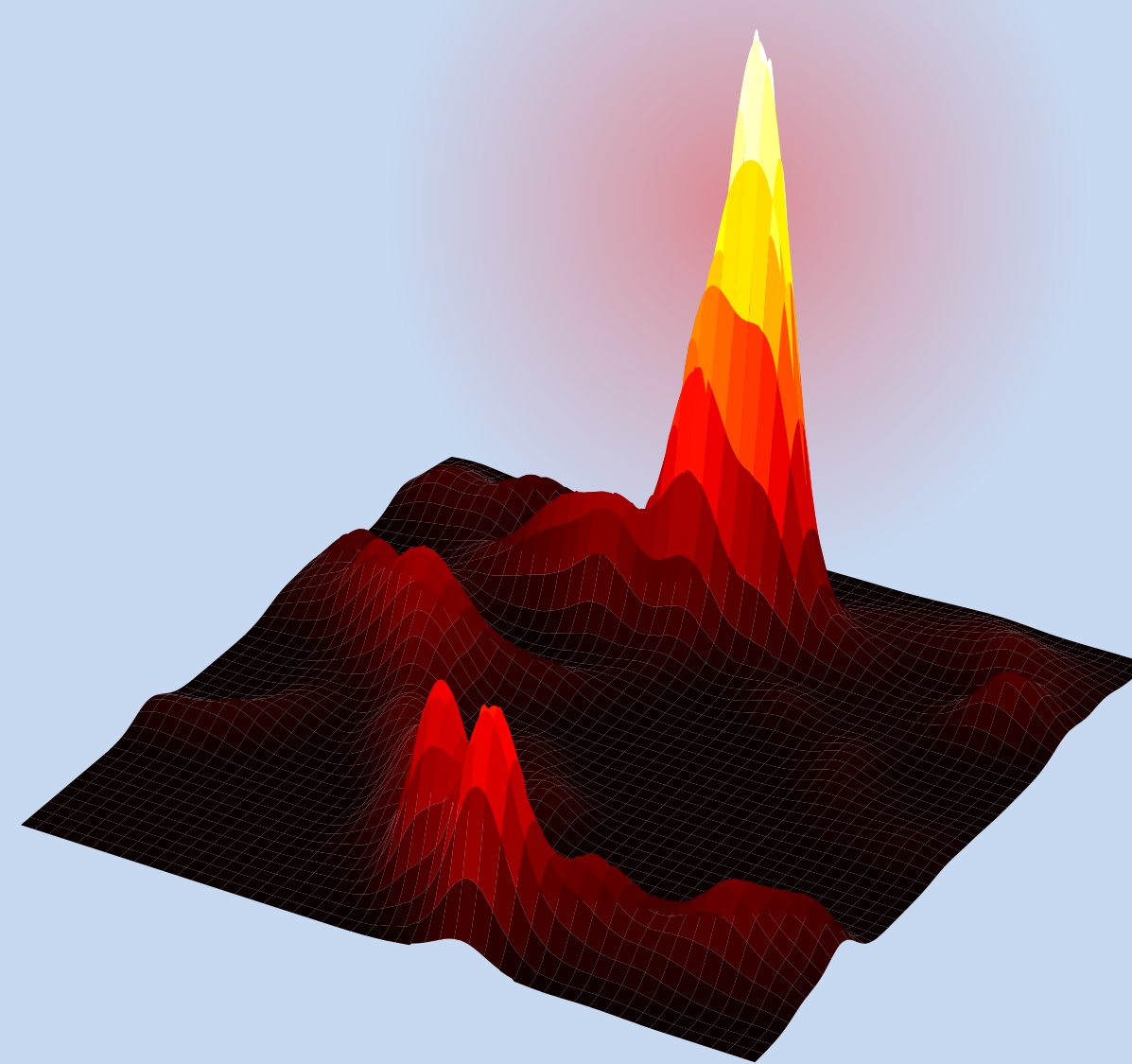
SHOULD YOU PUT A RING ON IT?

Power profile



$P \otimes \sim$
Convolution

Hotspot detection



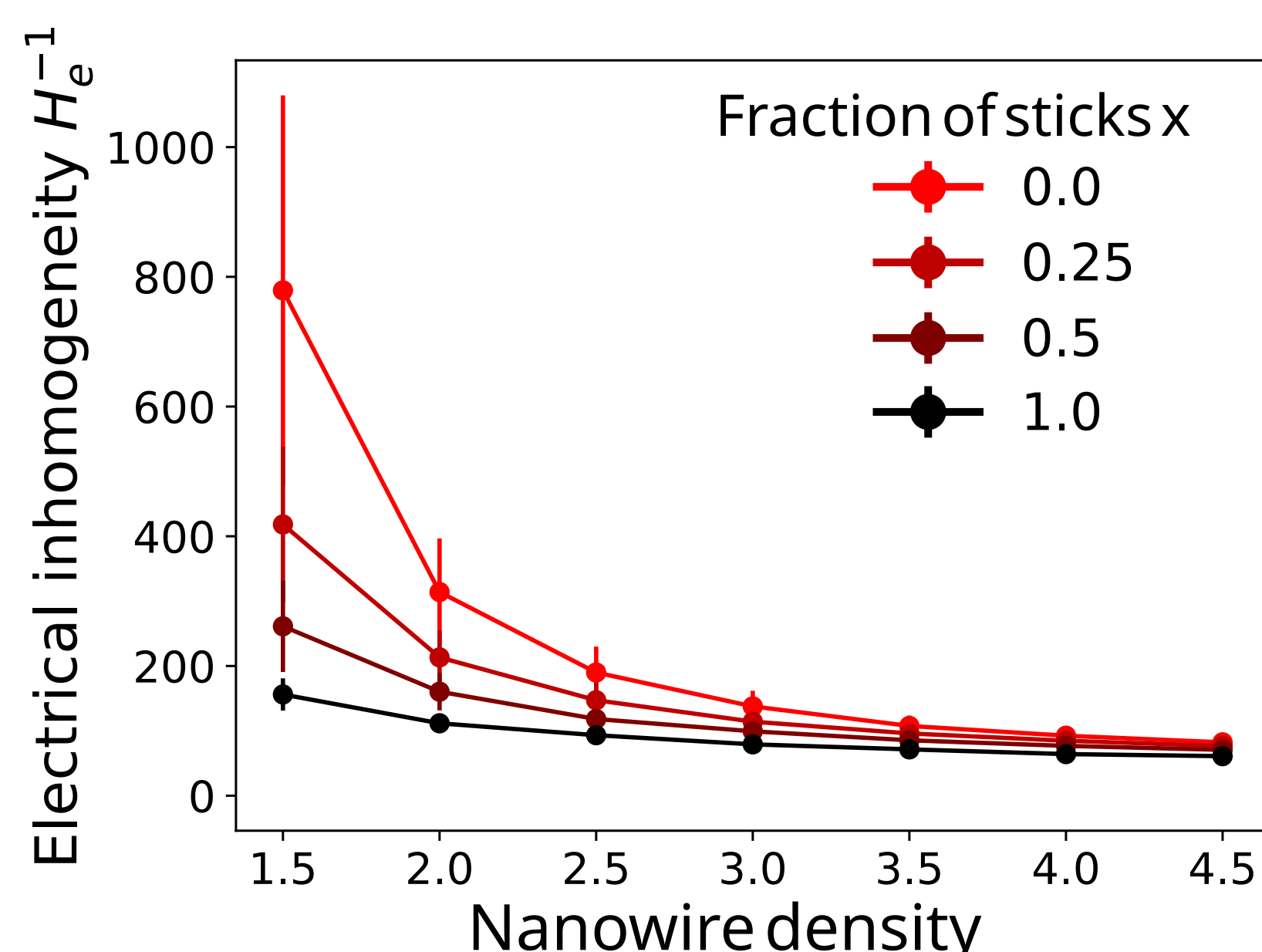
$$H_e = \frac{P_{max} - P_{net}}{P_{net}}$$

Peak maximum

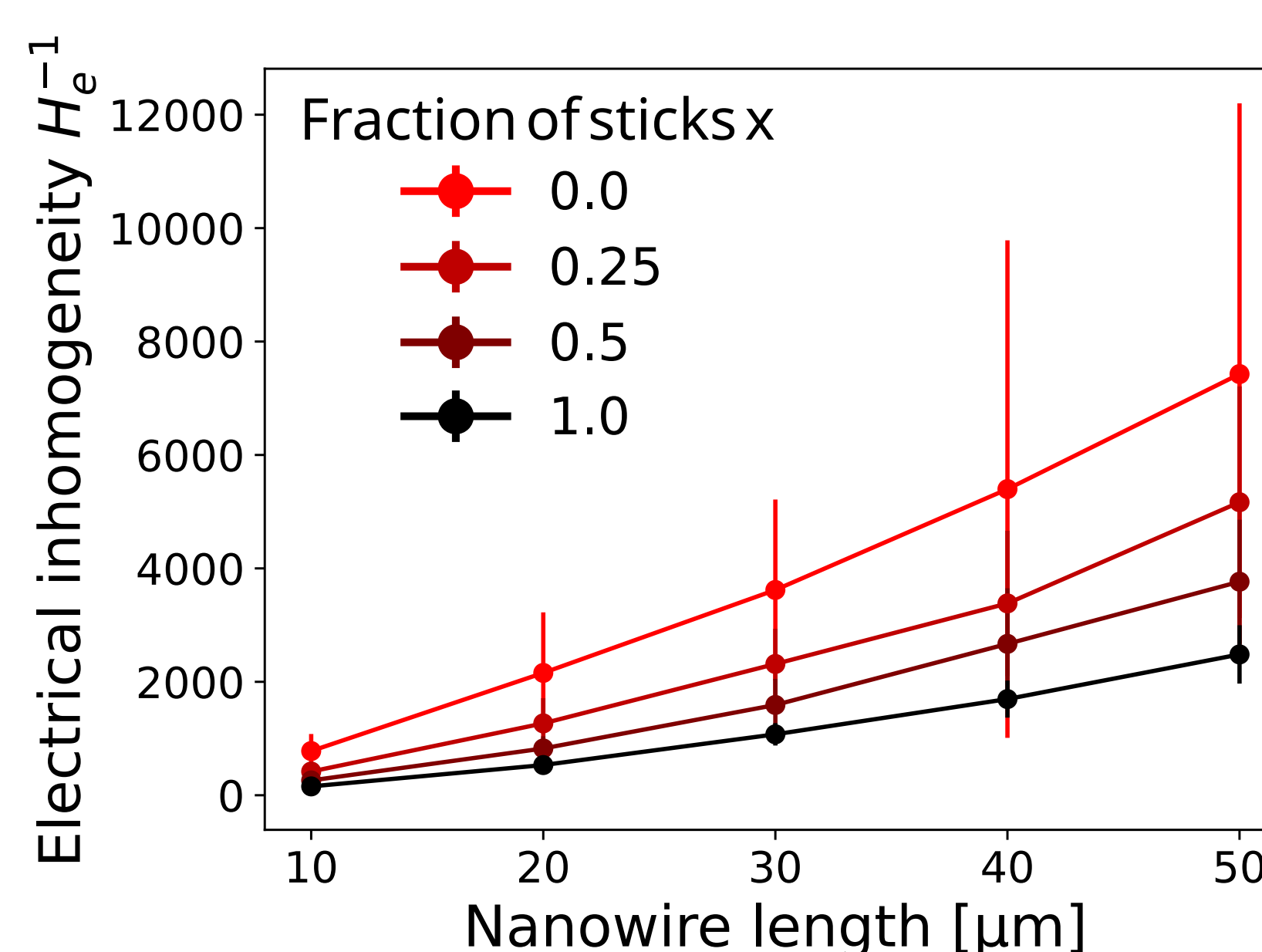
Calculate Electrical Homogeneity

OR SHOULD YOU GET STICKY WITH IT?

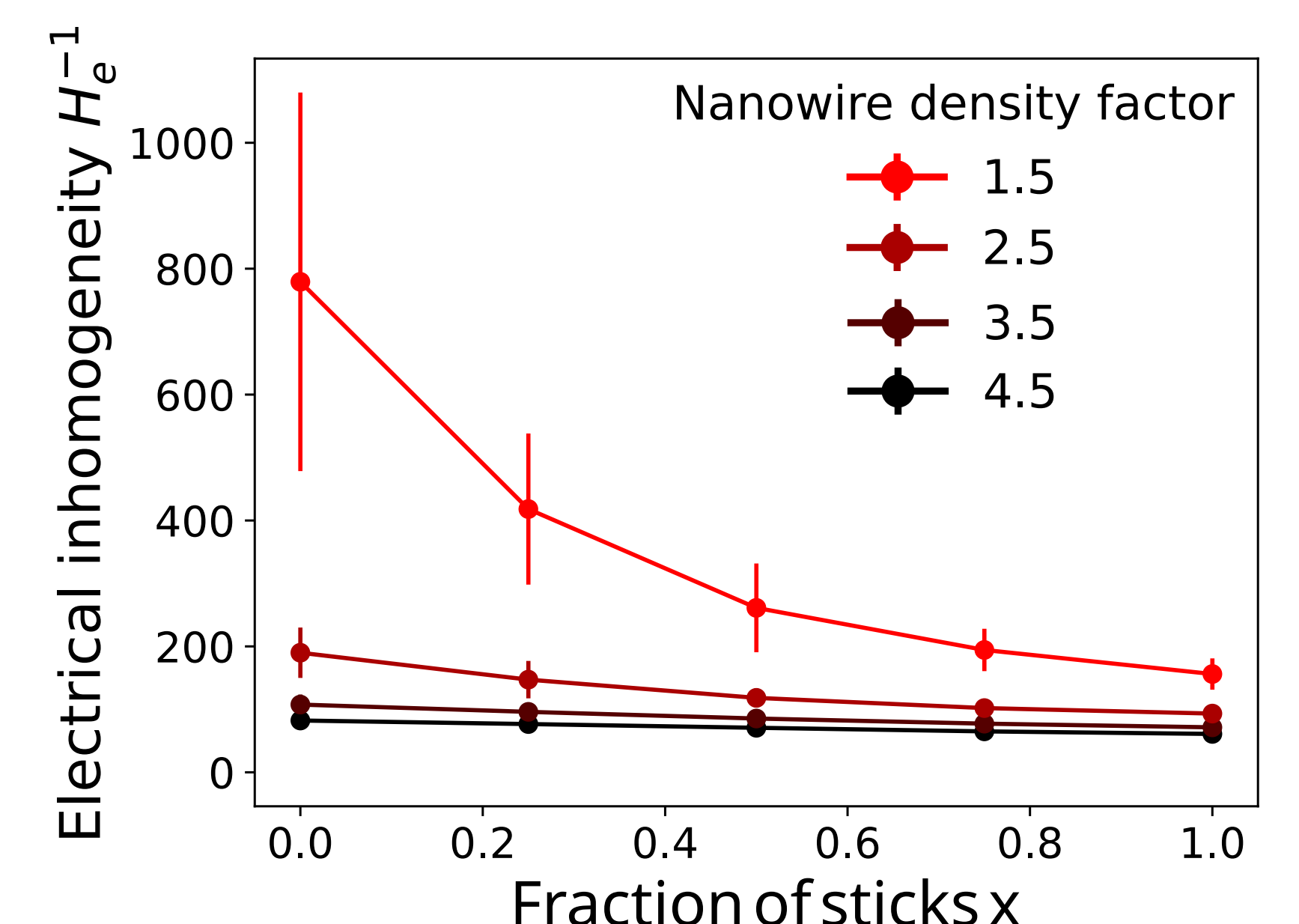
How can we decrease hotspot occurrence?



1. Increase density



2. Decrease length



3. Less rings, more sticks!



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Pictograms:
krisna arga muria
herra studio
SUBAIDA
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Theory Lab UHasselT: The research of our group focuses on nonequilibrium statistical physics. We deal mostly with a theoretical foundation for this theory, but also make the connection with applications in physics, biology and nano-technology. We have worked on work and fluctuation theorems (both for classical and quantum systems), microscopic theories for entropy production, thermodynamic efficiency at maximum power, stochastic thermodynamics, Brownian motors and refrigerators, electrochemical and electro-optical nano-devices, knots in macromolecules, non-equilibrium