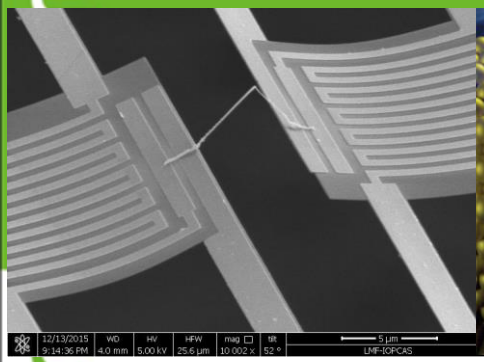
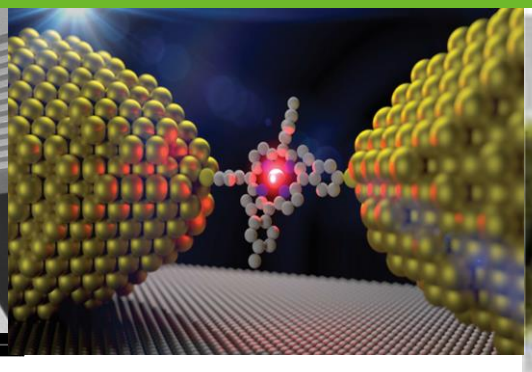
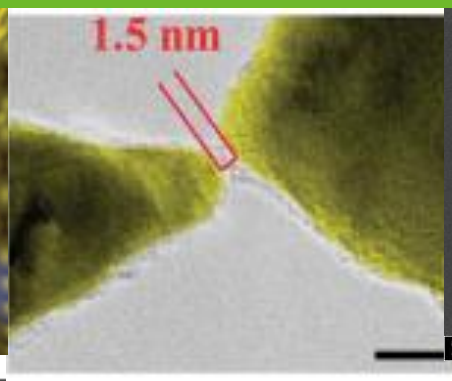
中国科学院
北京物质科学大型仪器区域中心
BEIJING REGIONAL CENTER OF MATERIAL SCIENCE INSTRUMENT

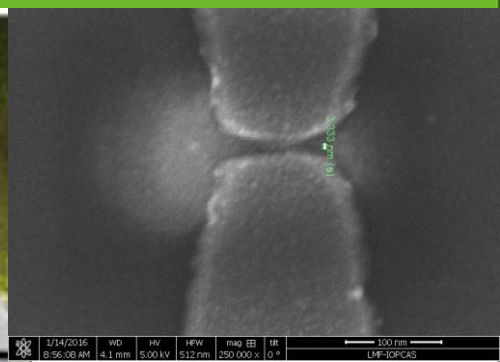
微加工实验室
Laboratory of Microfabrication

微加工实验室所内用户交流会 · 2016

薄膜悬浮结构的微纳米加工技术

唐成春

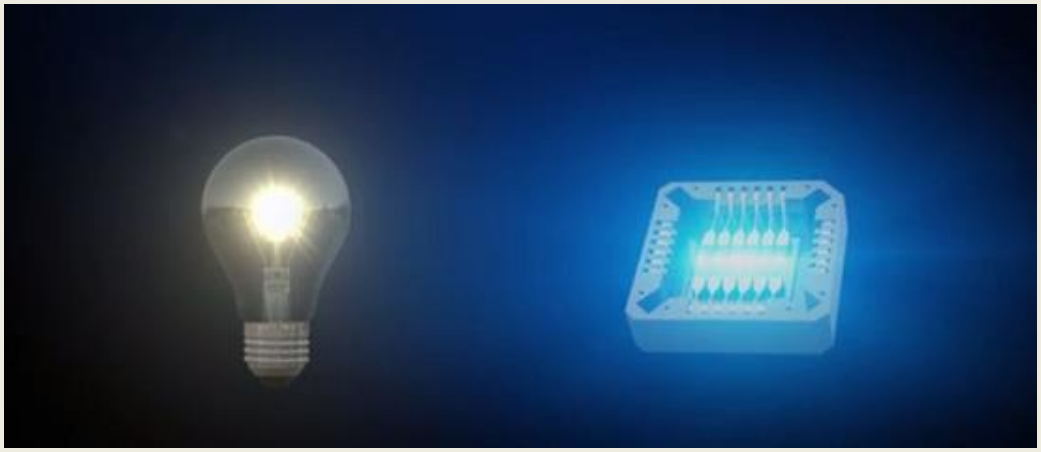


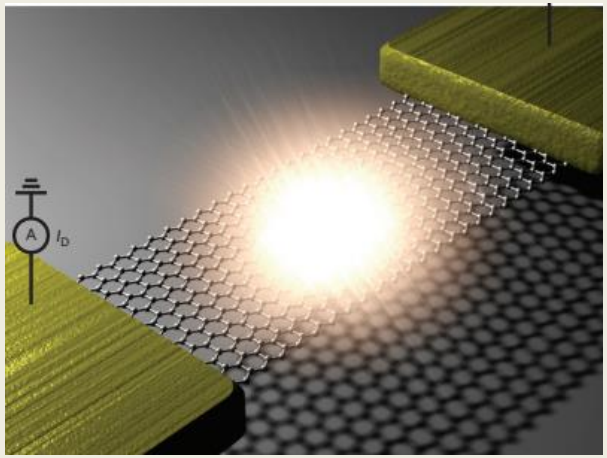
1、绝热薄膜悬浮结构加工

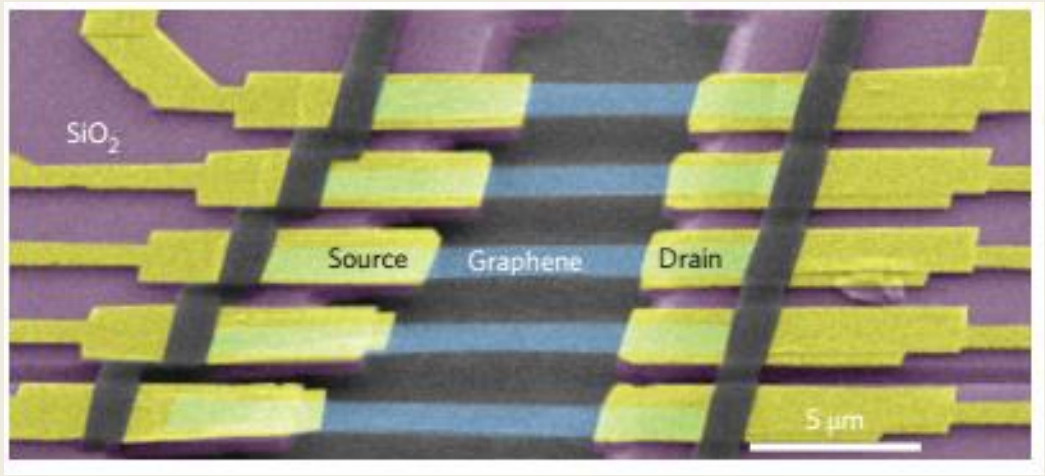
2、自支撑纳米间隙电极加工

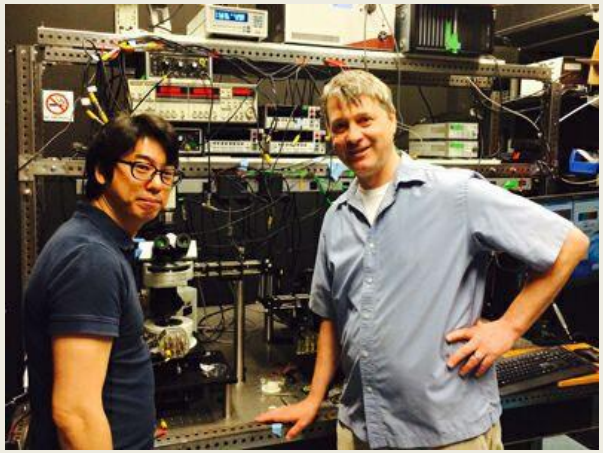
1、绝热薄膜悬浮结构加工

为什么悬浮：降低热传导，增强光辐射…





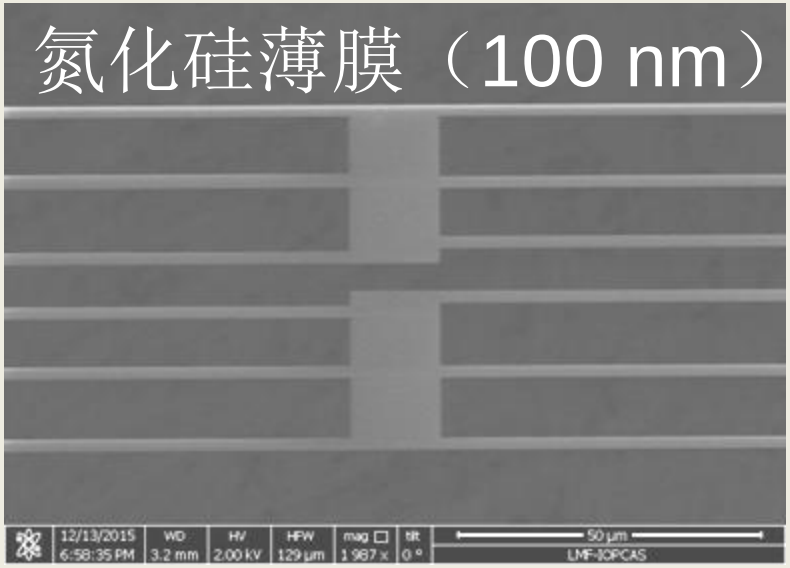


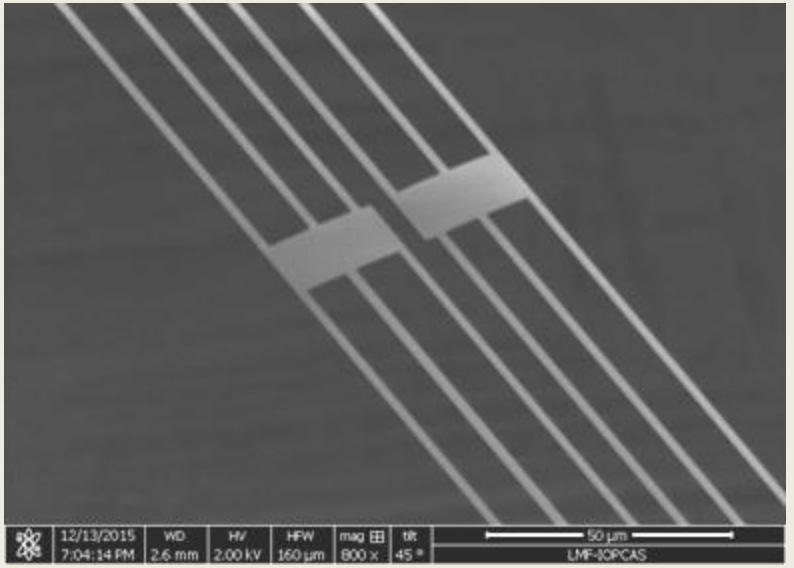


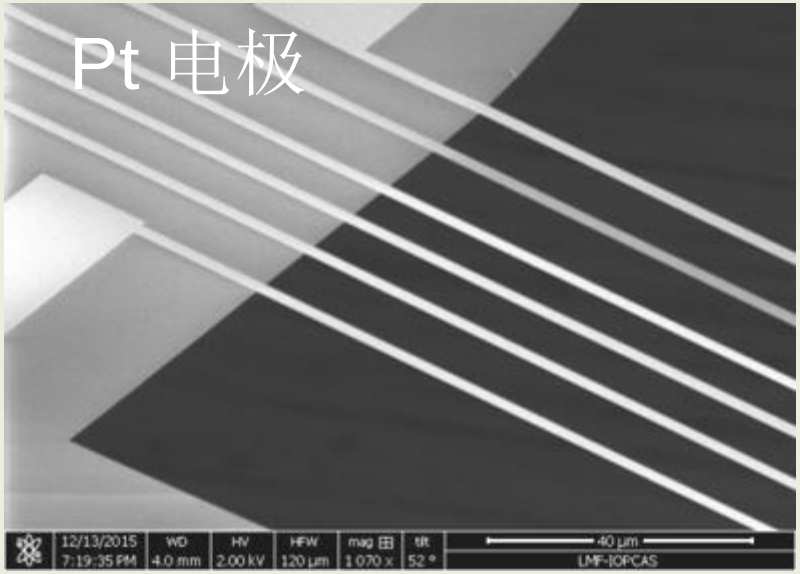
NATURE NANOTECHNOLOGY ， VOL 10 ， 2015

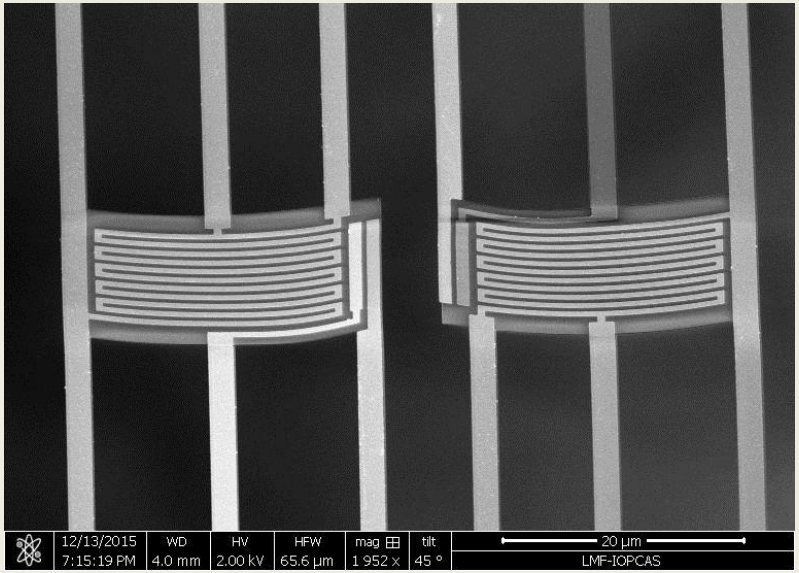
韩国Young Duck Kim和美国James Hone教授

氮化硅薄膜悬挂支架与Pt悬挂电极

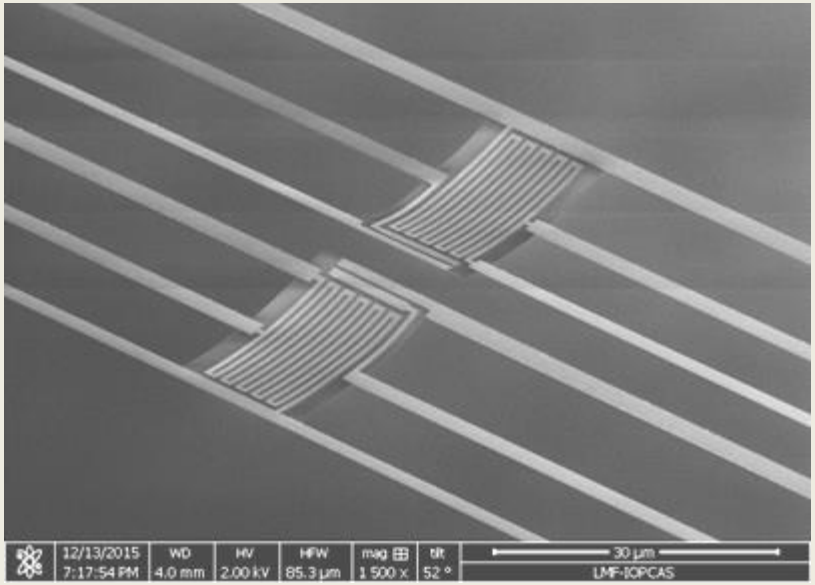








真空控温热岛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HV
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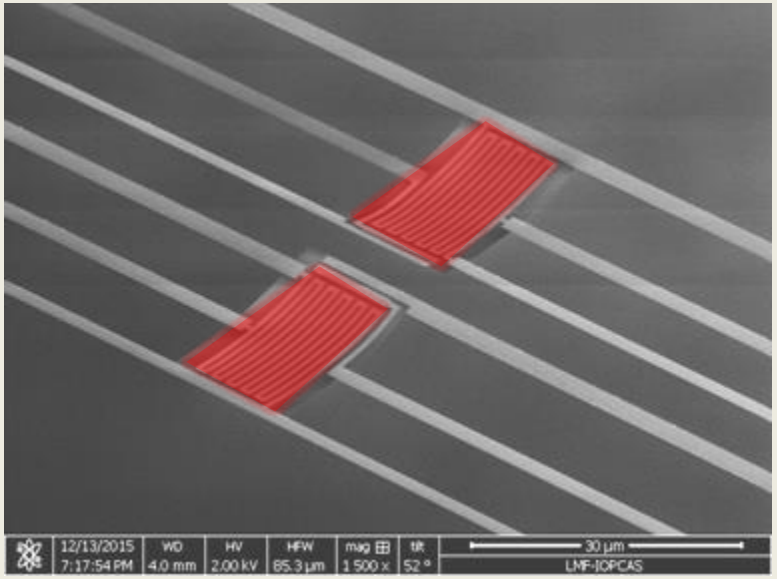
HFW
85.3 µm
mag
1 500 x
tilt
52 °
30 µm
LMF-IOPCAS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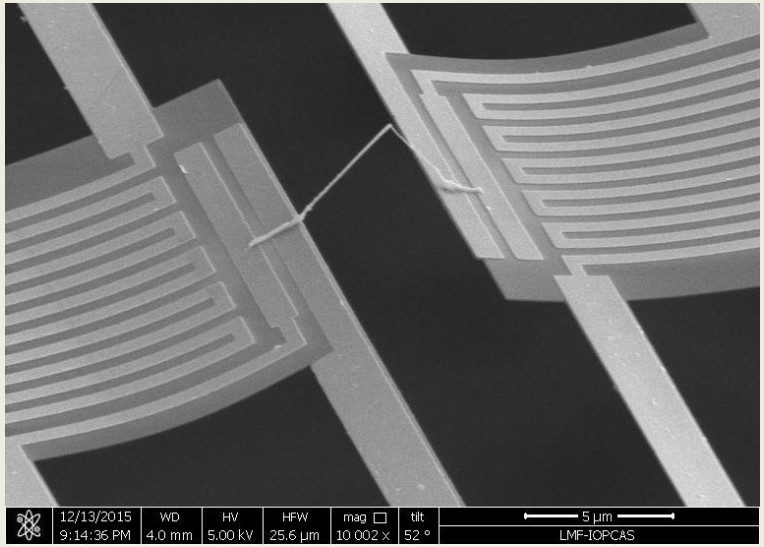
应用研究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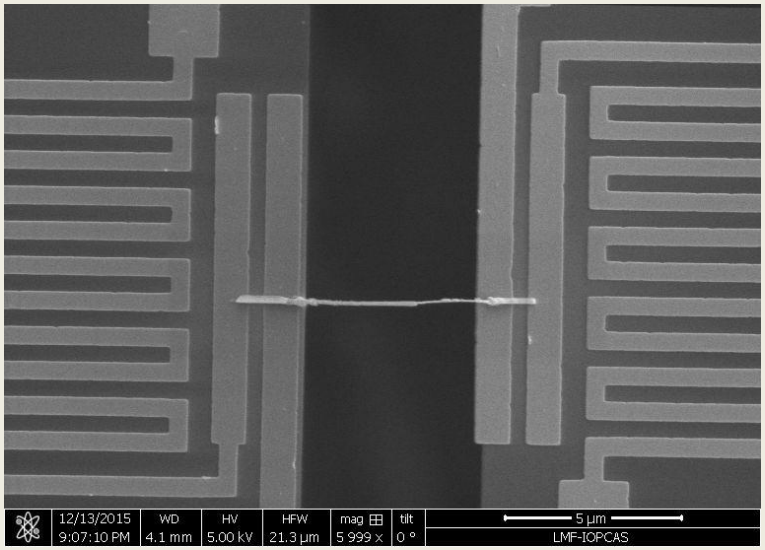
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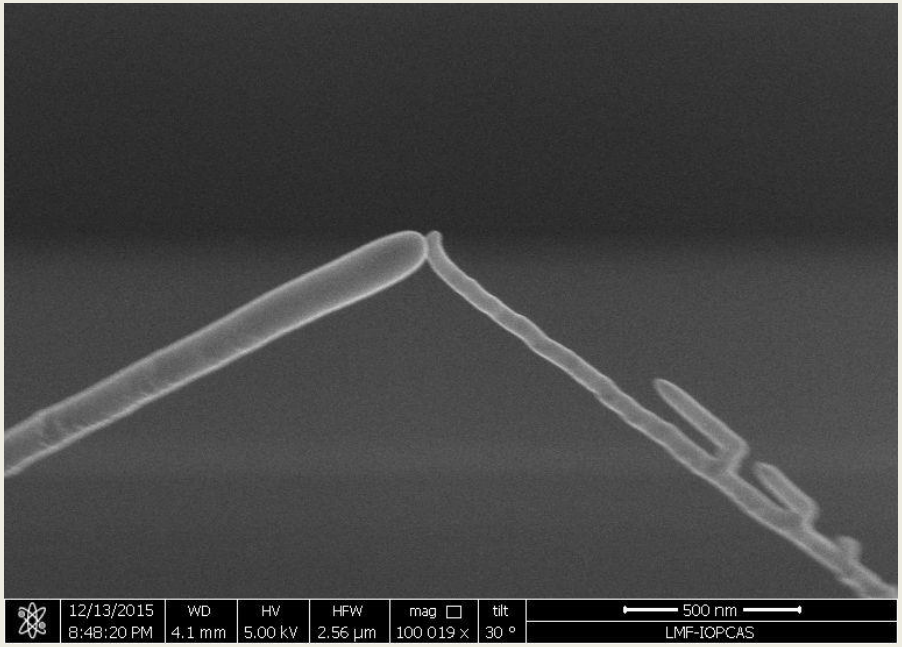
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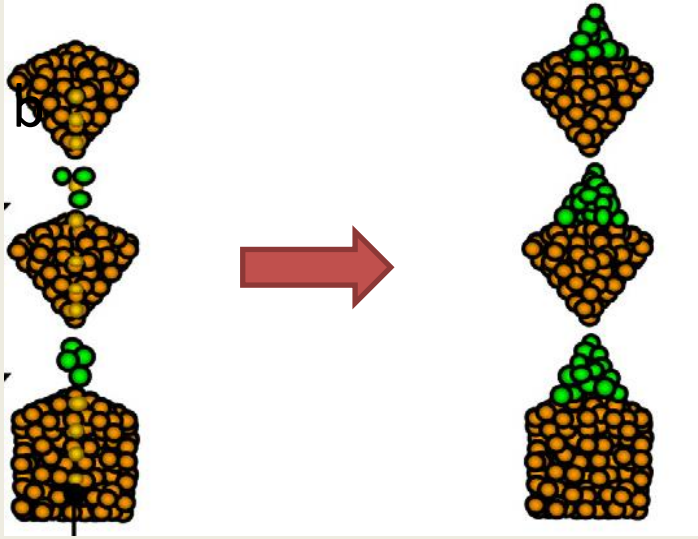
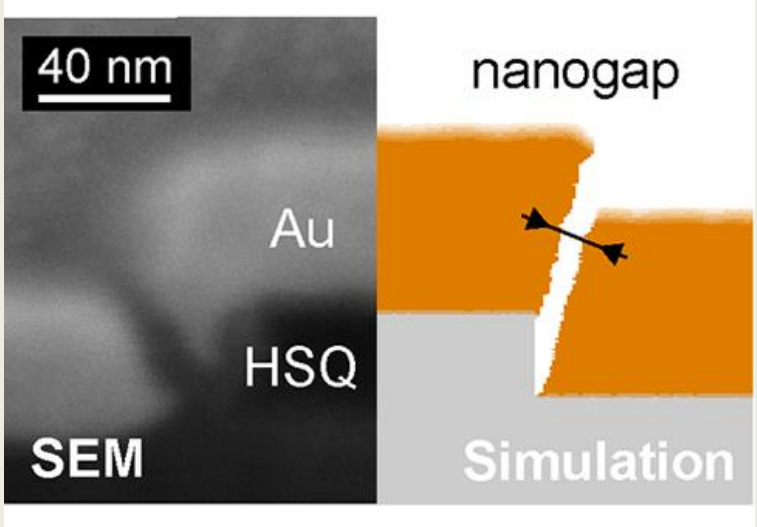
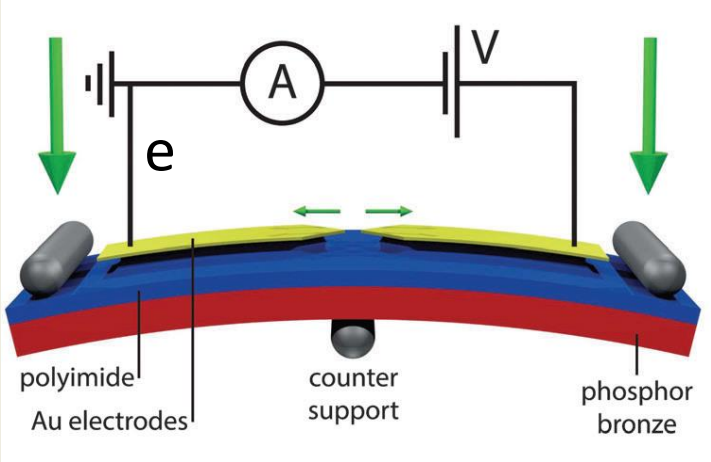
2、自支撑纳米间隙电极加工



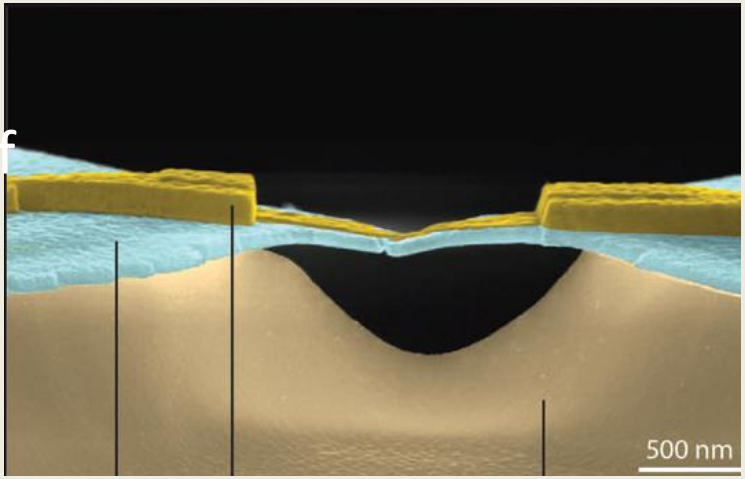
电迁移传质缩减纳米间隙示意图



台阶断层纳米间隙电极

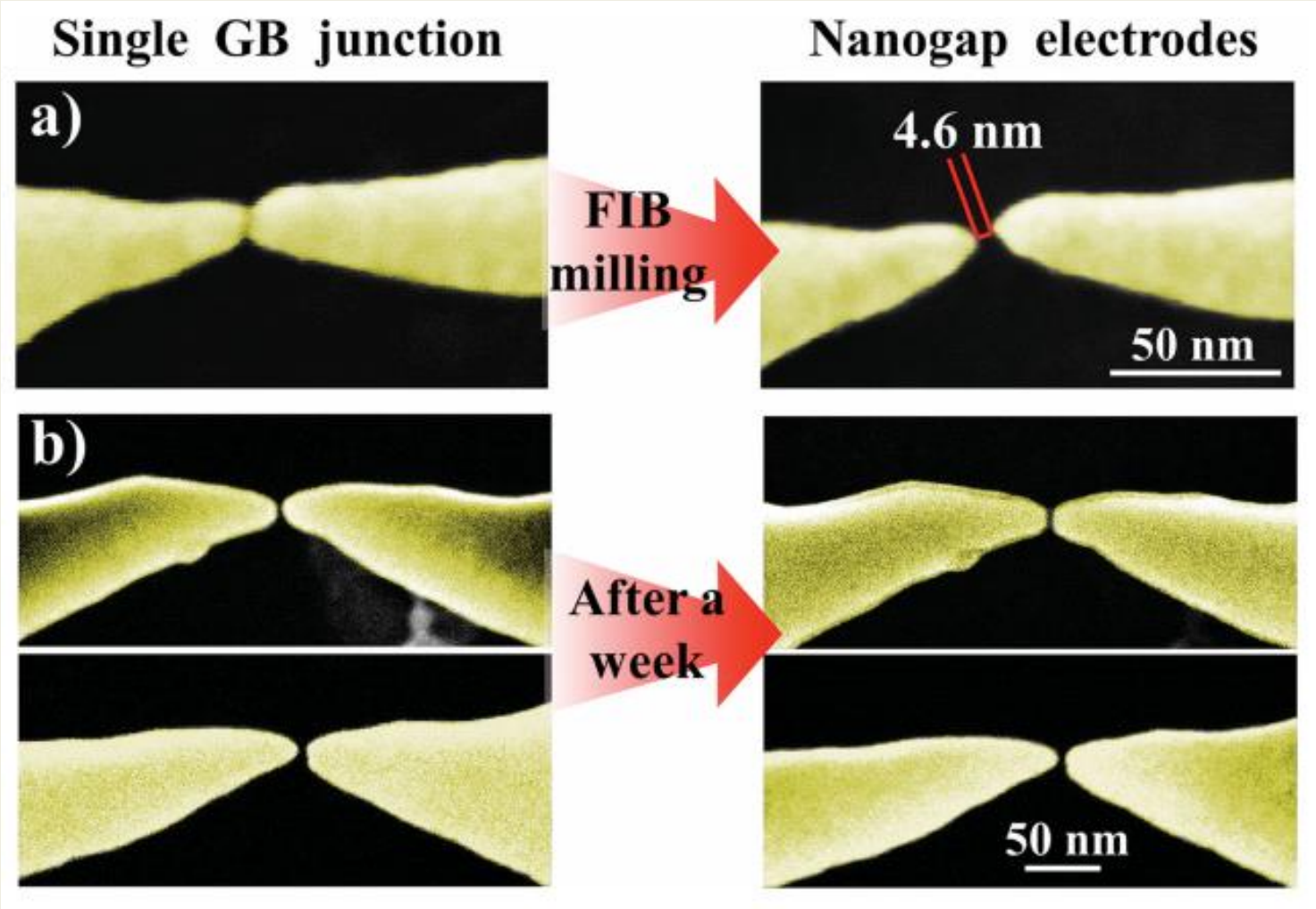


机械弯曲应变断结间隙电极示意图

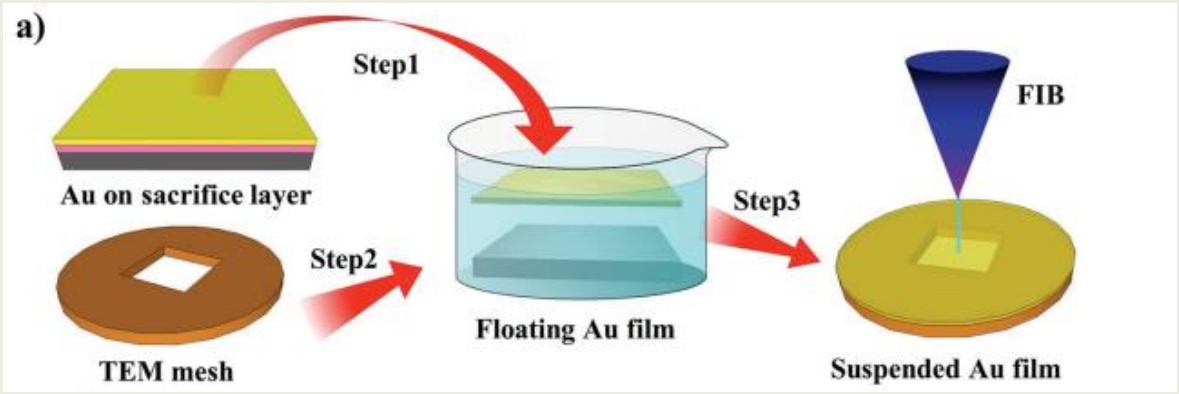


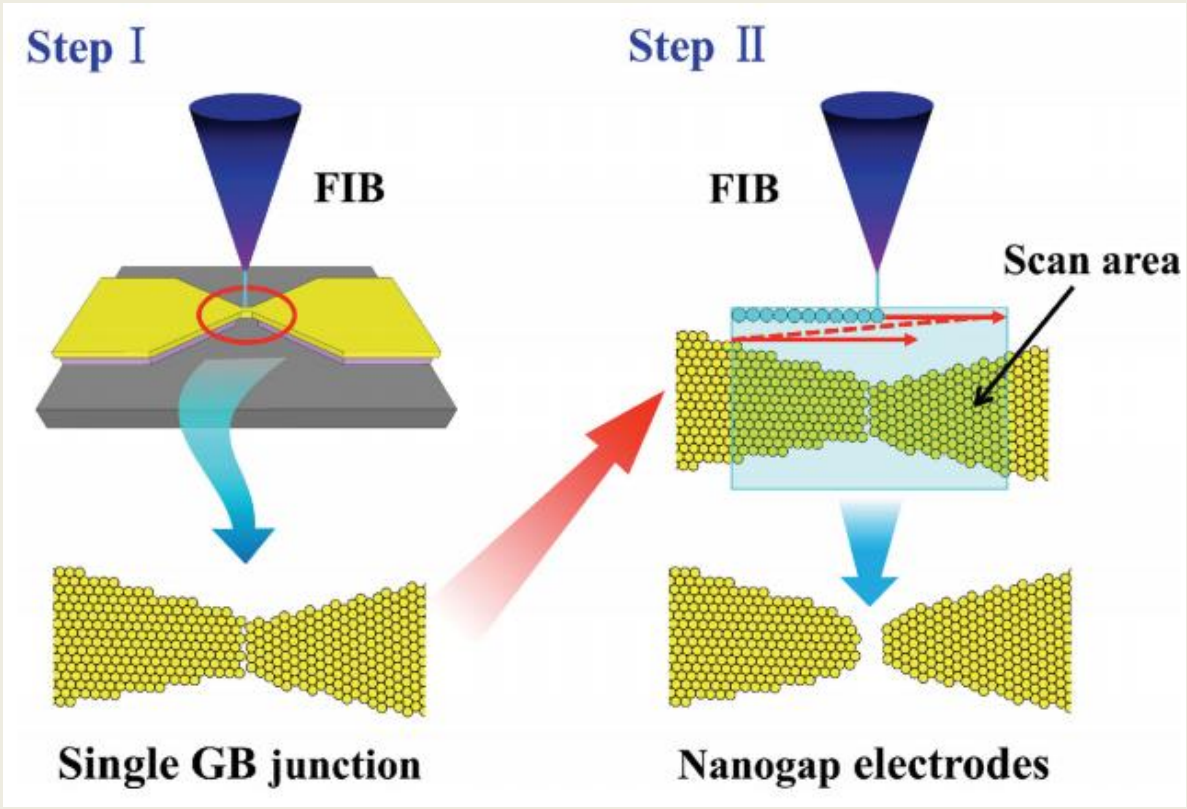
凹面断结间隙电极照片

聚焦离子束加工获取金纳米间隙

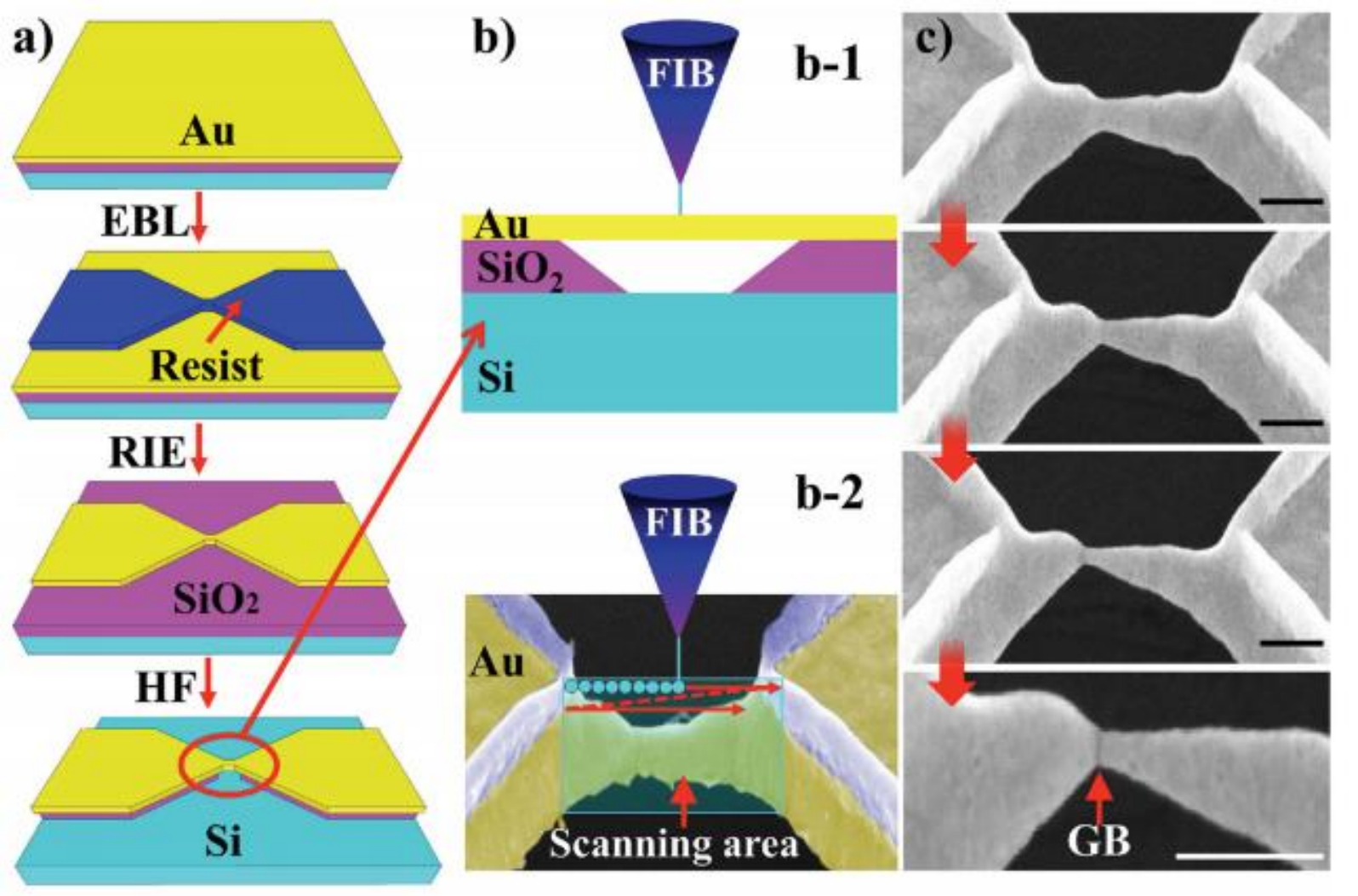


TEM铜网悬挂金纳米间隙加工流程示意图





硅衬底悬挂金纳米间隙对电极获取方法



谢谢！