Silica Nanowires Part I: Optical Properties

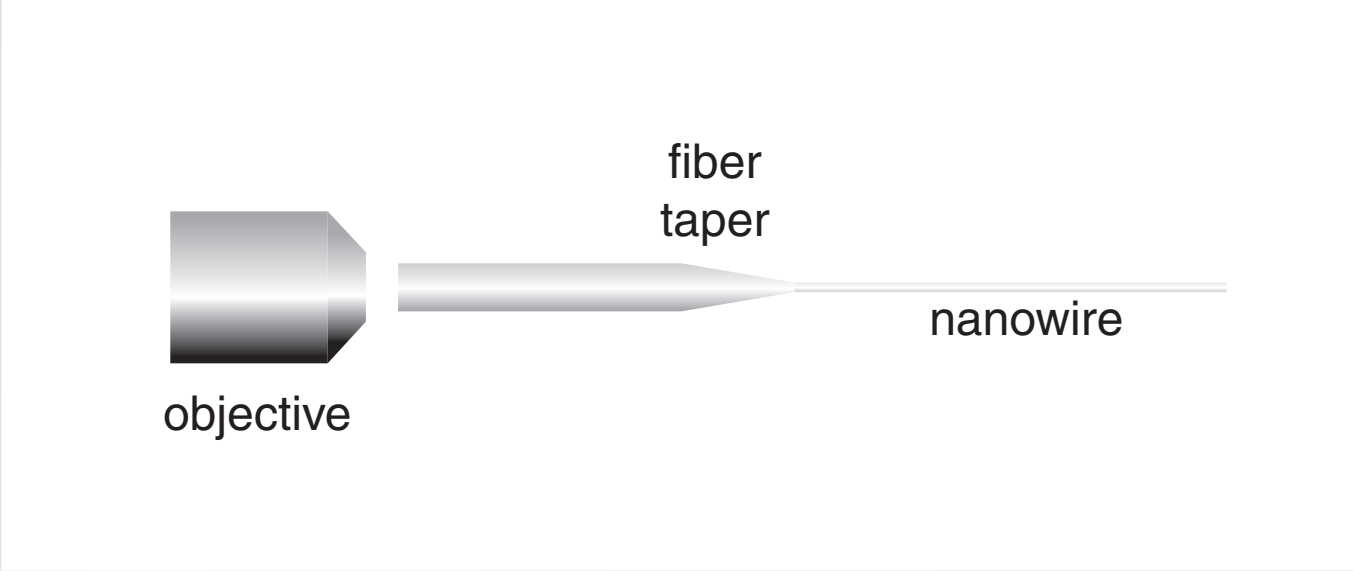
RS Seminar on Science and Technology of Silica Nanowires
Kavli Institute of the Royal Society
Milton Keynes, United Kingdom, 8 November 2012

Optical properties

coupling light into nanowires

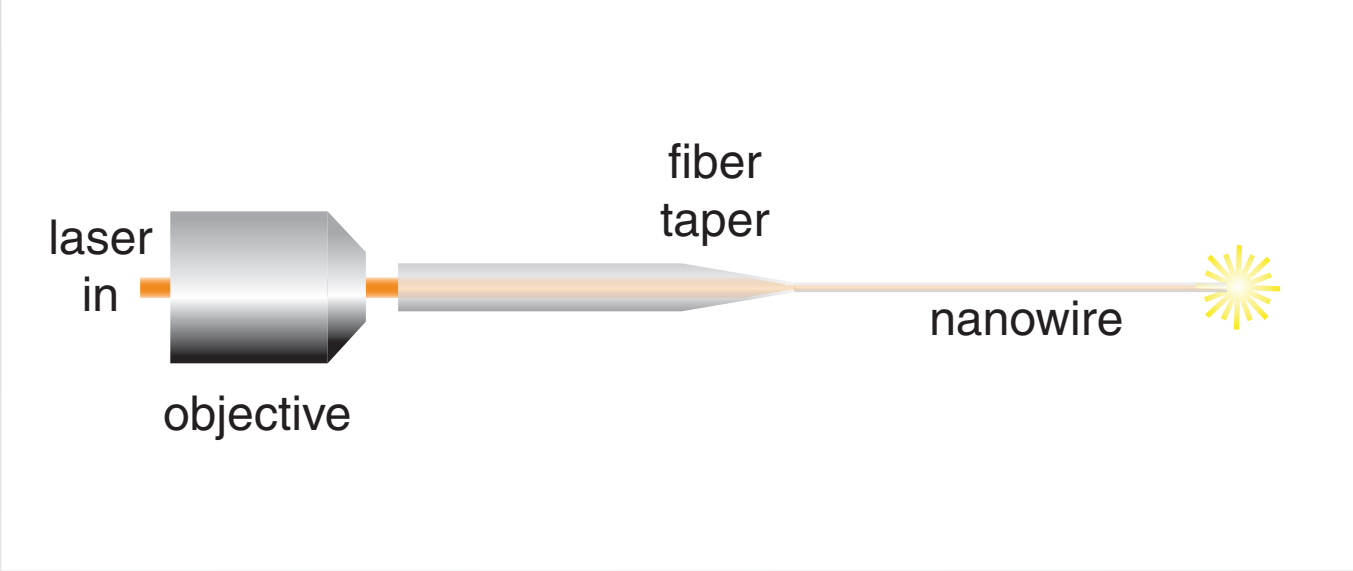
Optical properties

coupling light into nanowires



Optical properties

coupling light into nanowires



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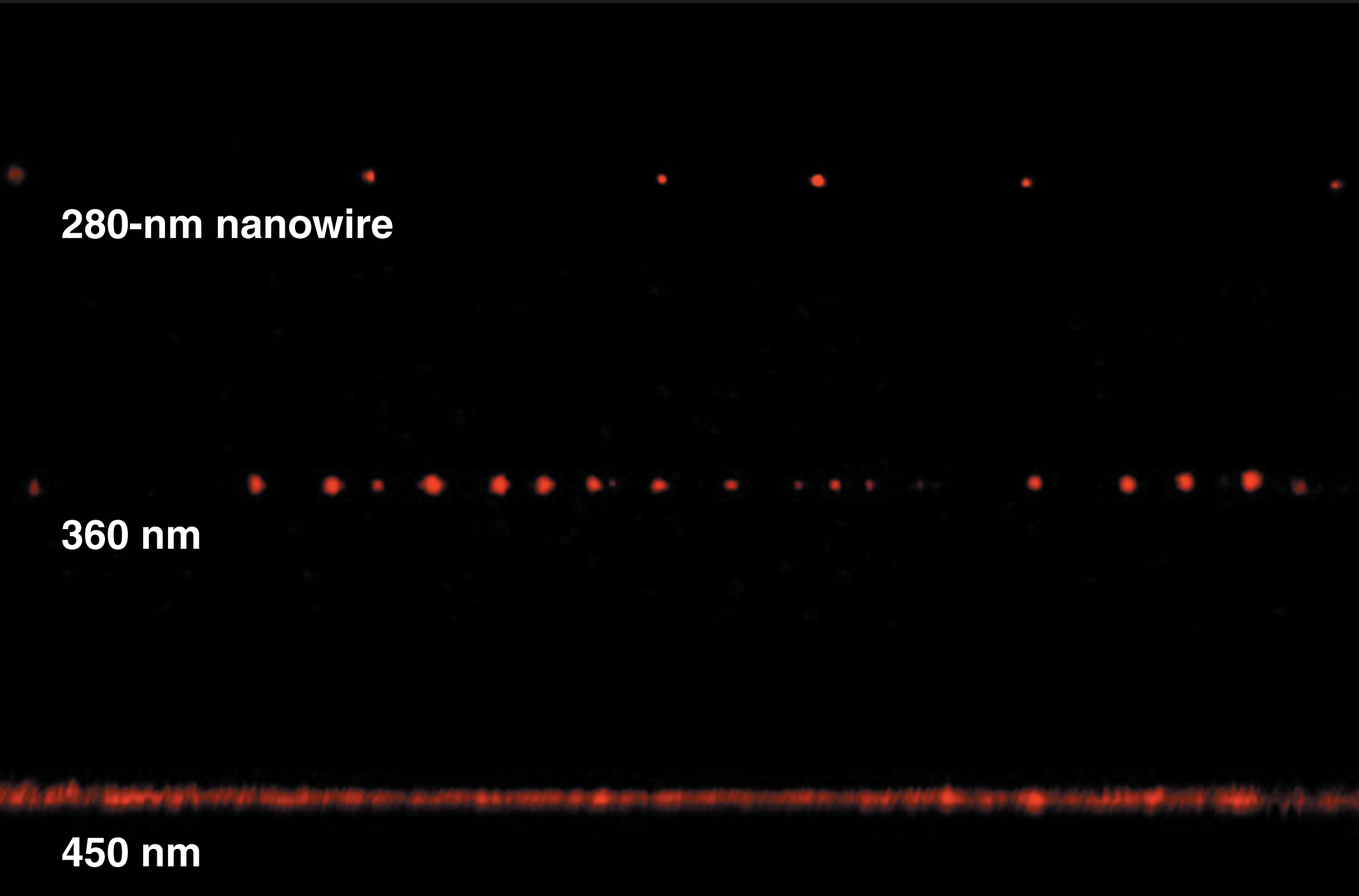

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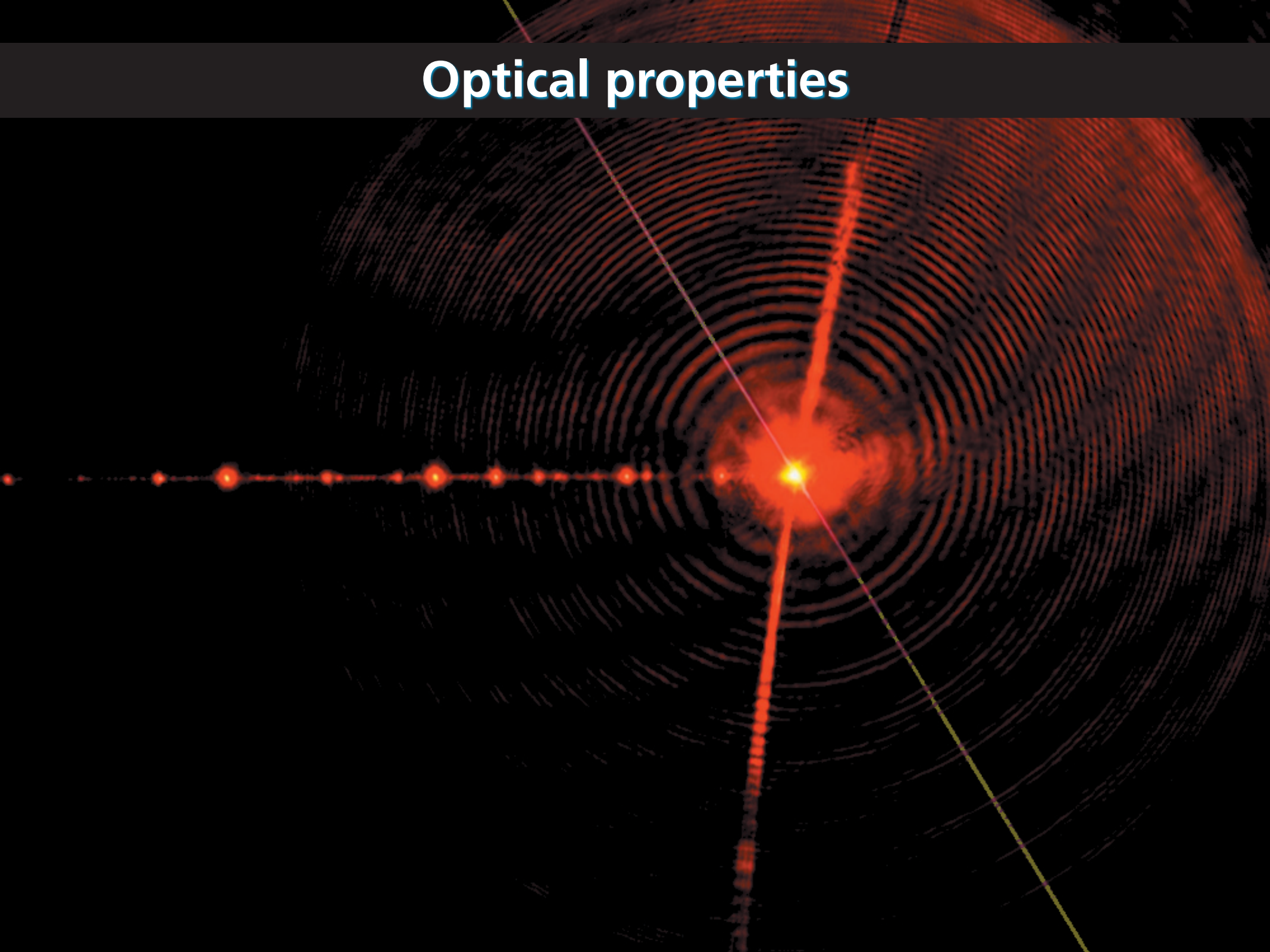
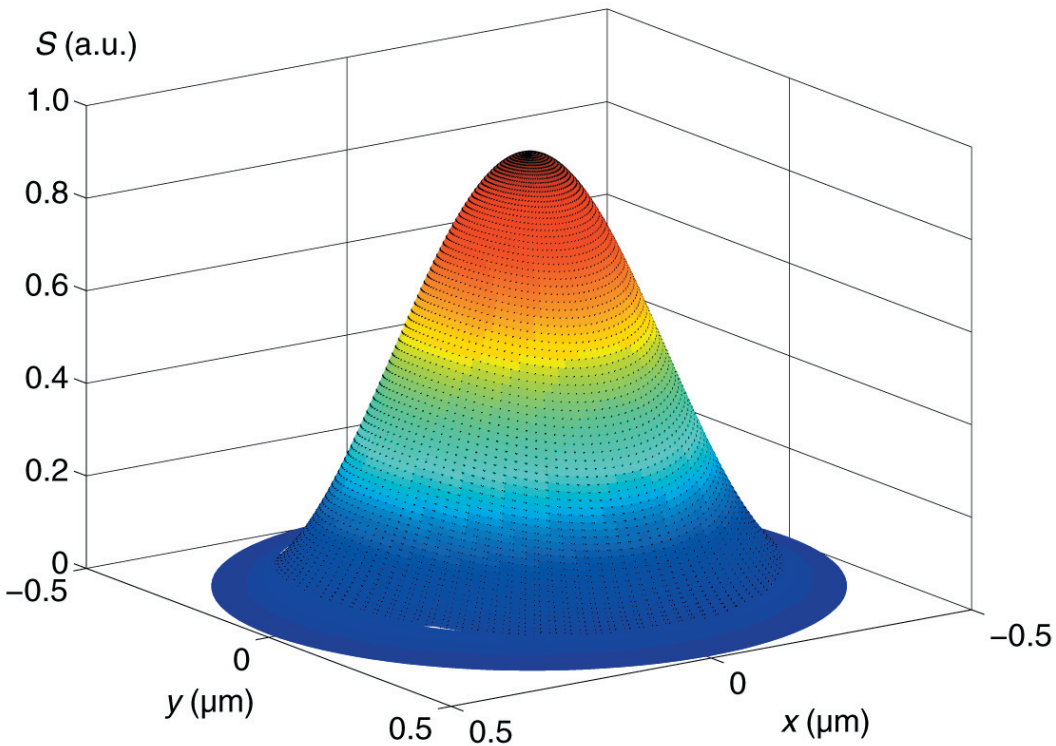


Optical properties

Optical properties

Poynting vector profile for 800-nm nanowire



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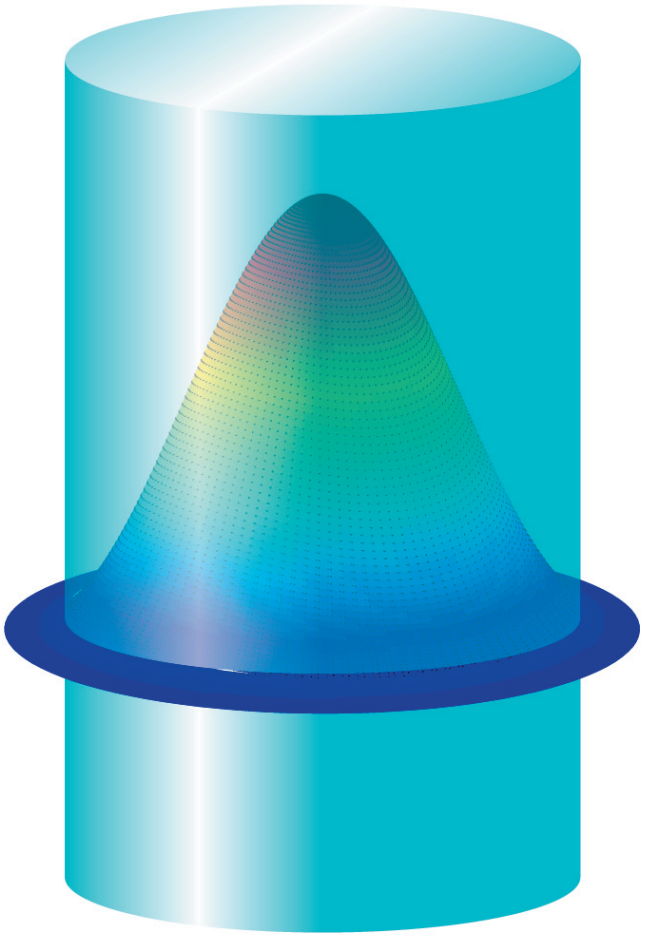

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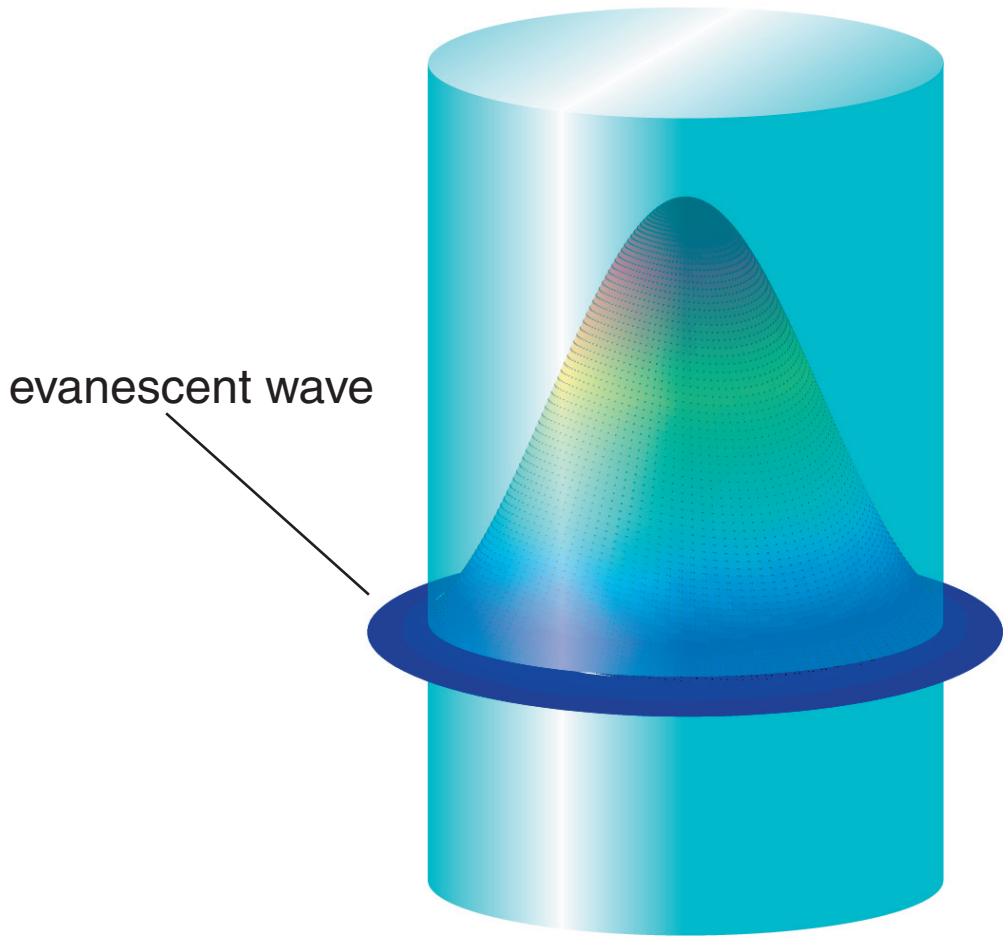
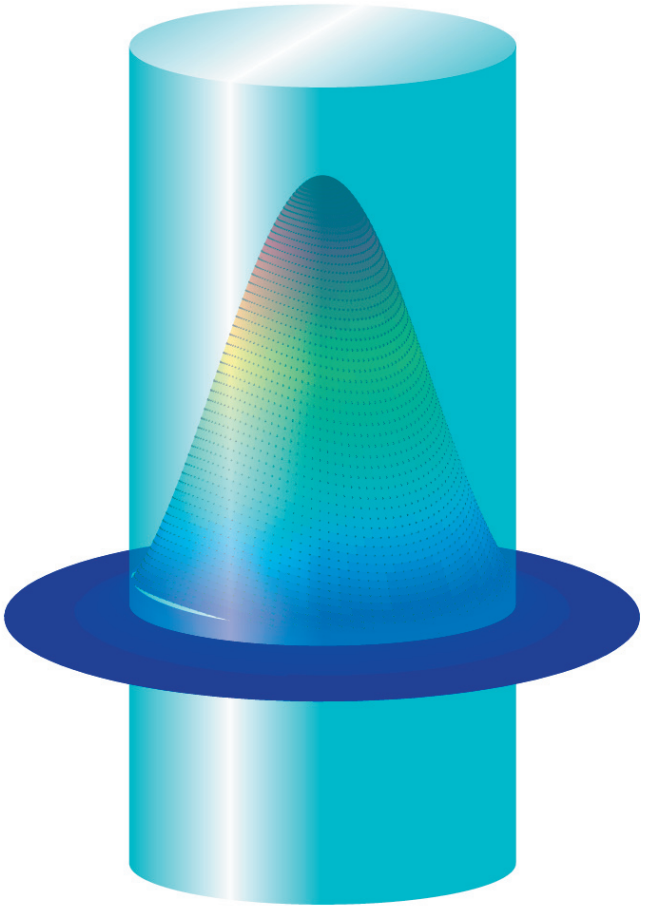


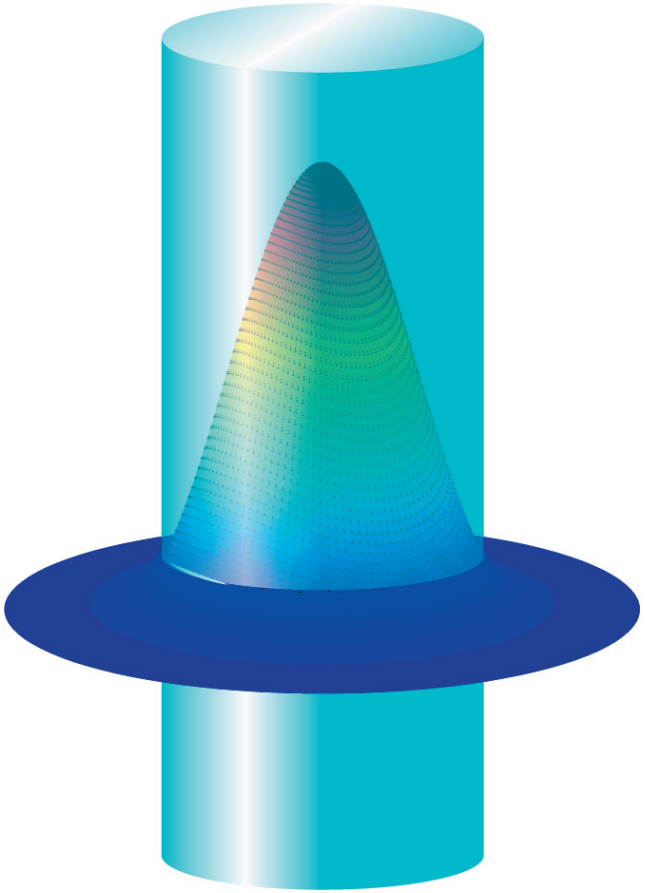
Optical properties

Poynting vector profile for 600-nm nanowire



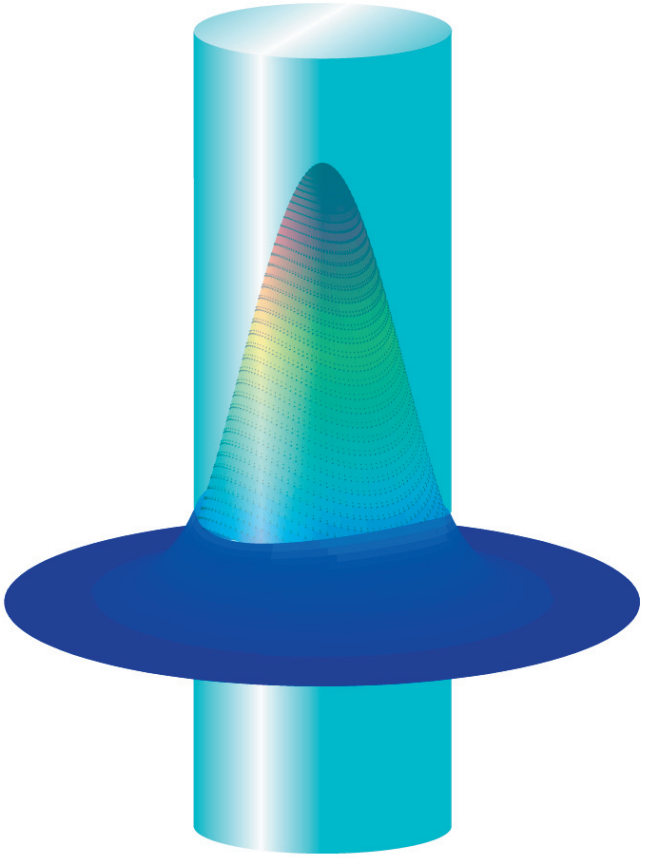
Optical properties

Poynting vector profile for 500-nm nanowire



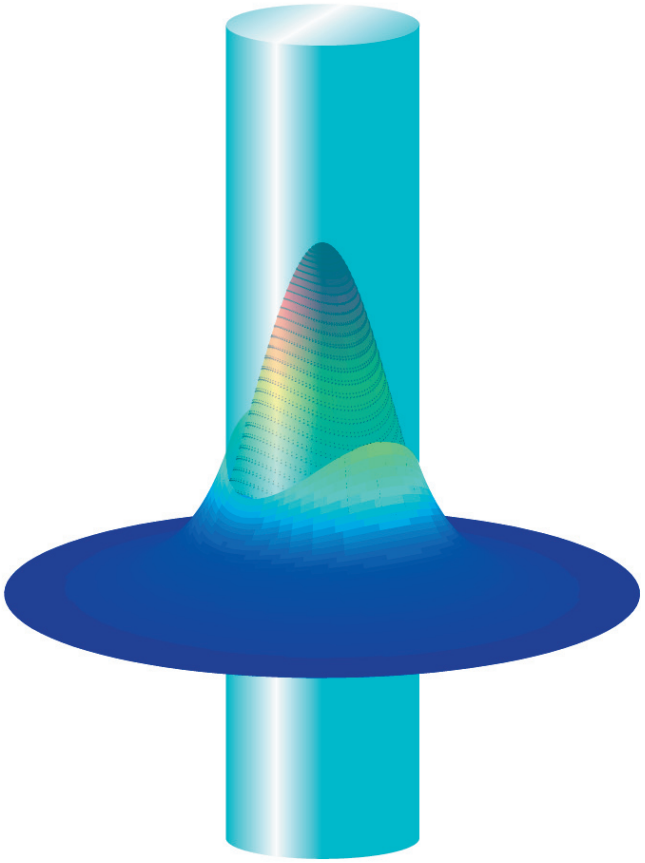
Optical properties

Poynting vector profile for 400-nm nanowire



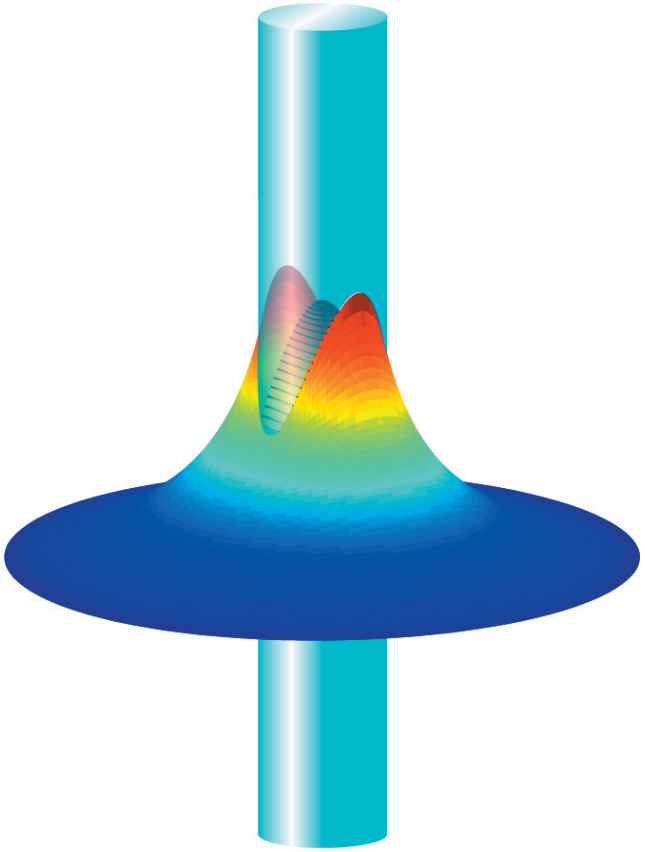
Optical properties

Poynting vector profile for 300-nm nanowire



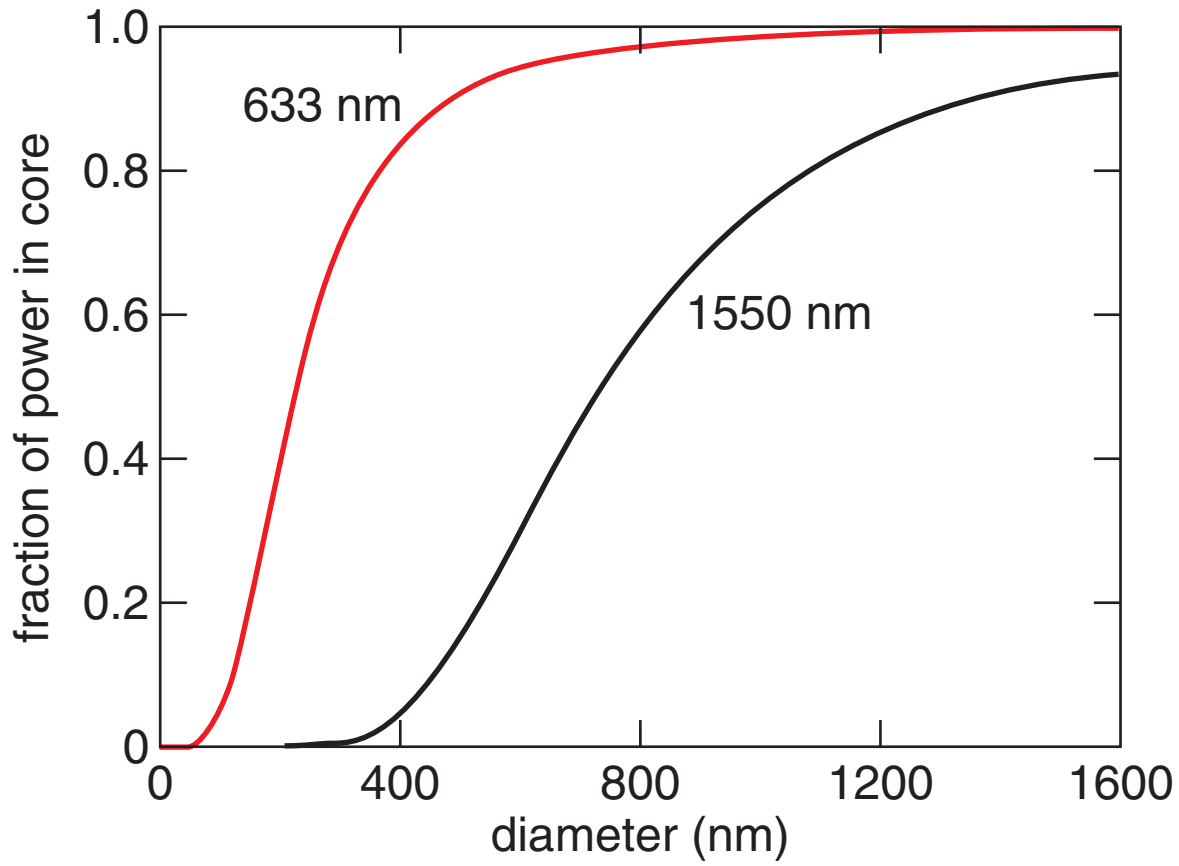
Optical properties

Poynting vector profile for 200-nm nanowire



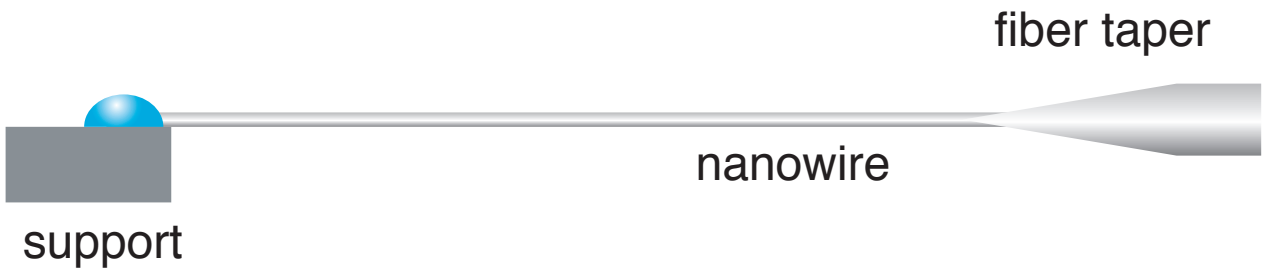
Waveguiding

fraction of power carried in core



Optical properties

coupling light between nanowires



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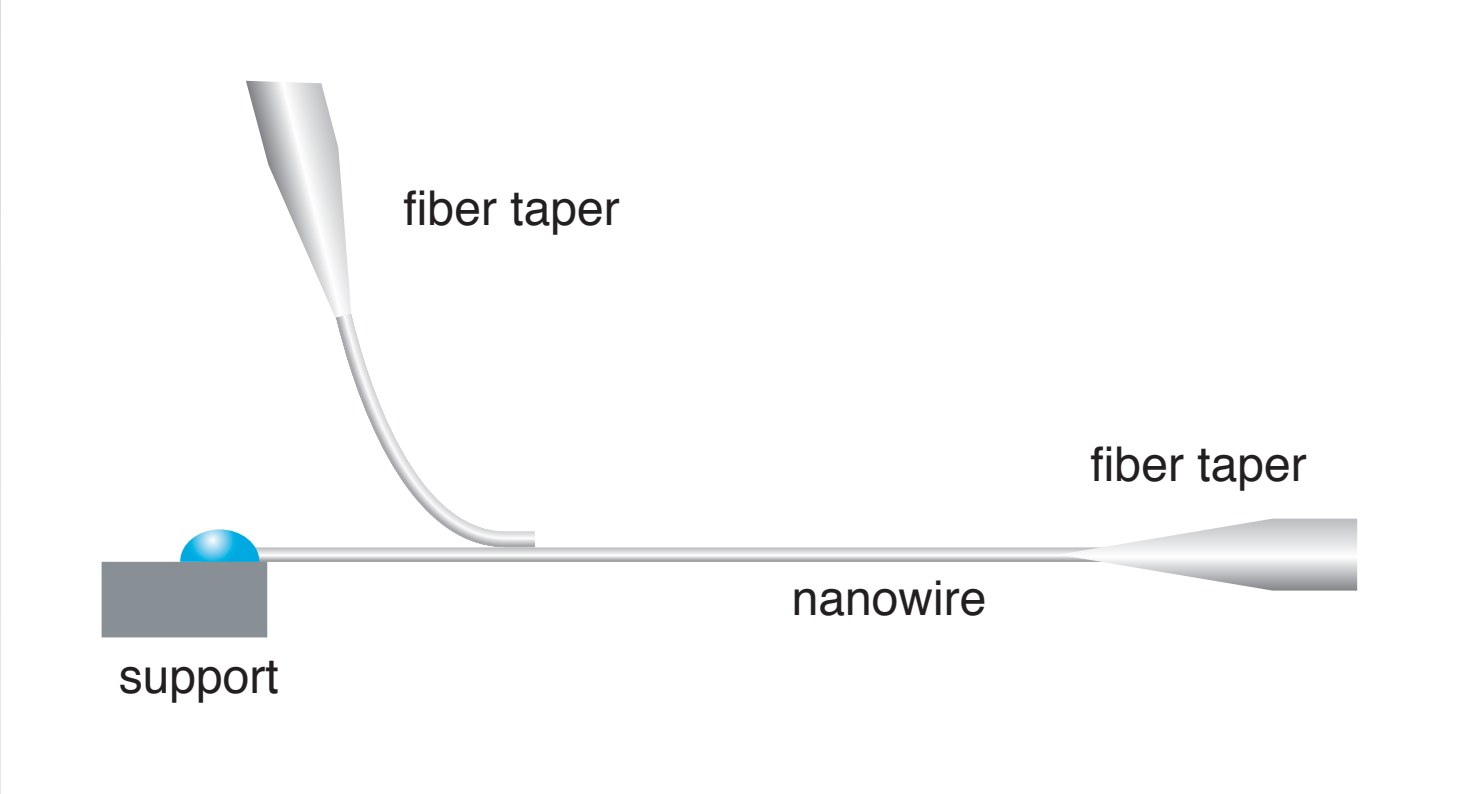

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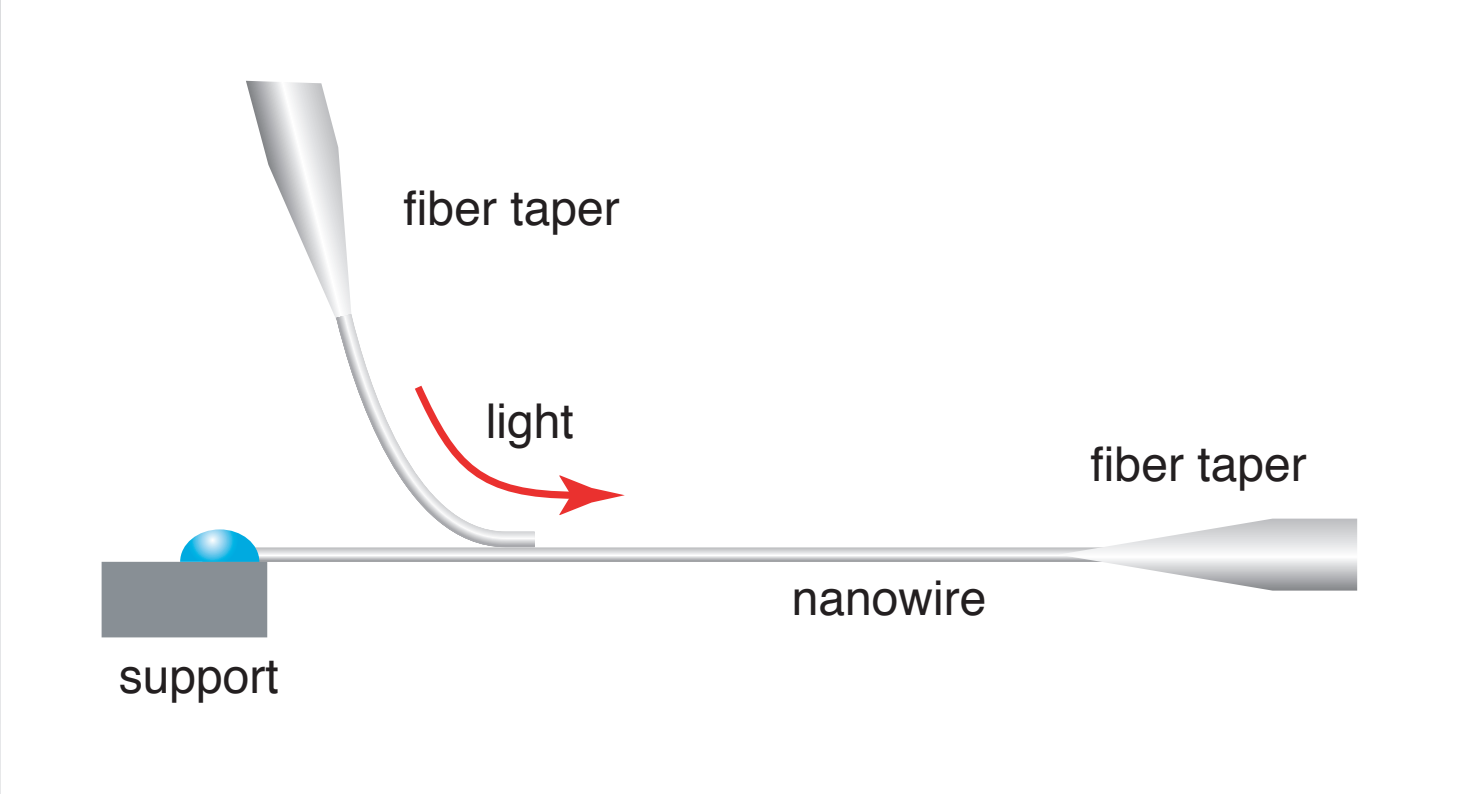

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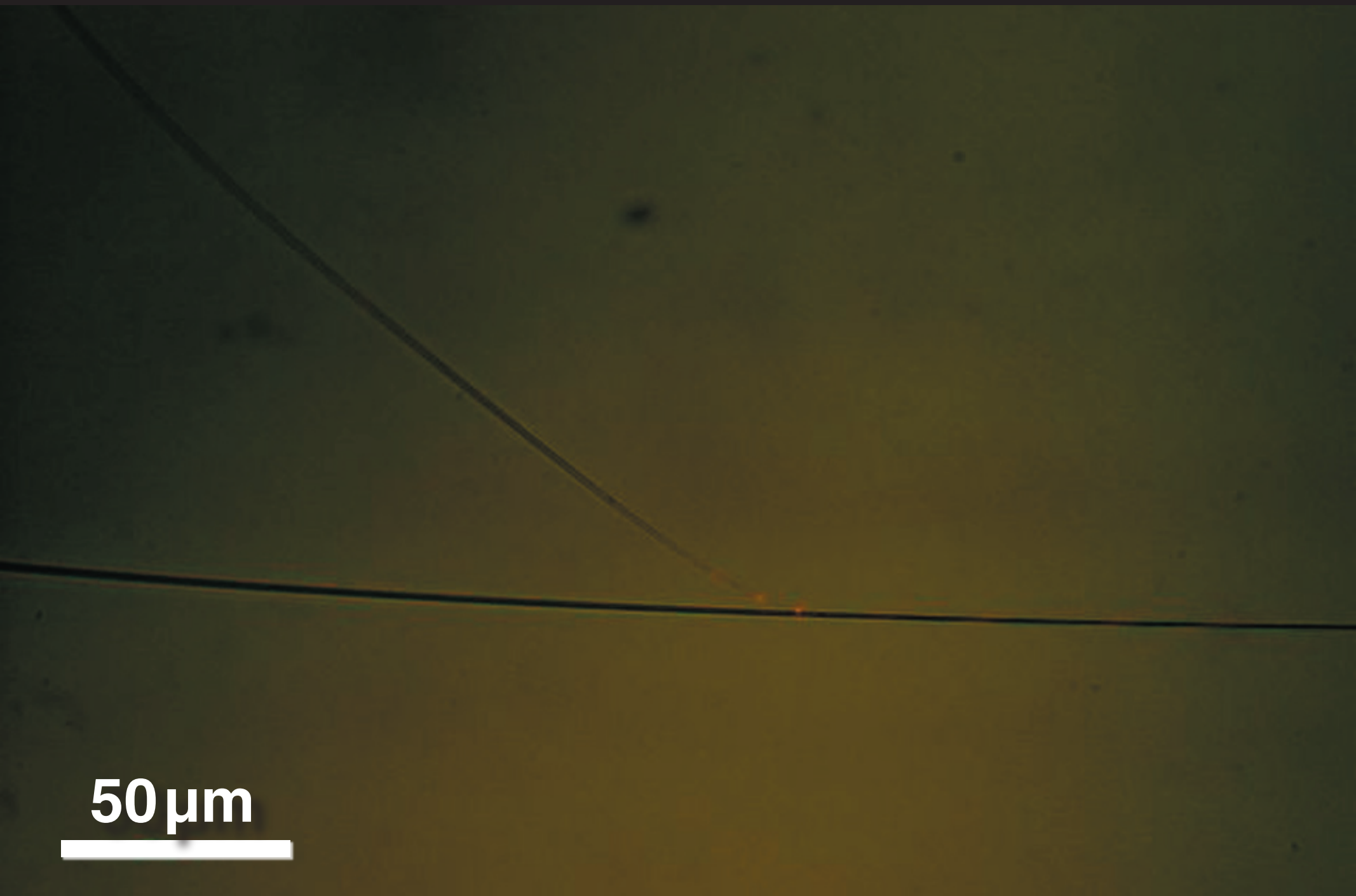

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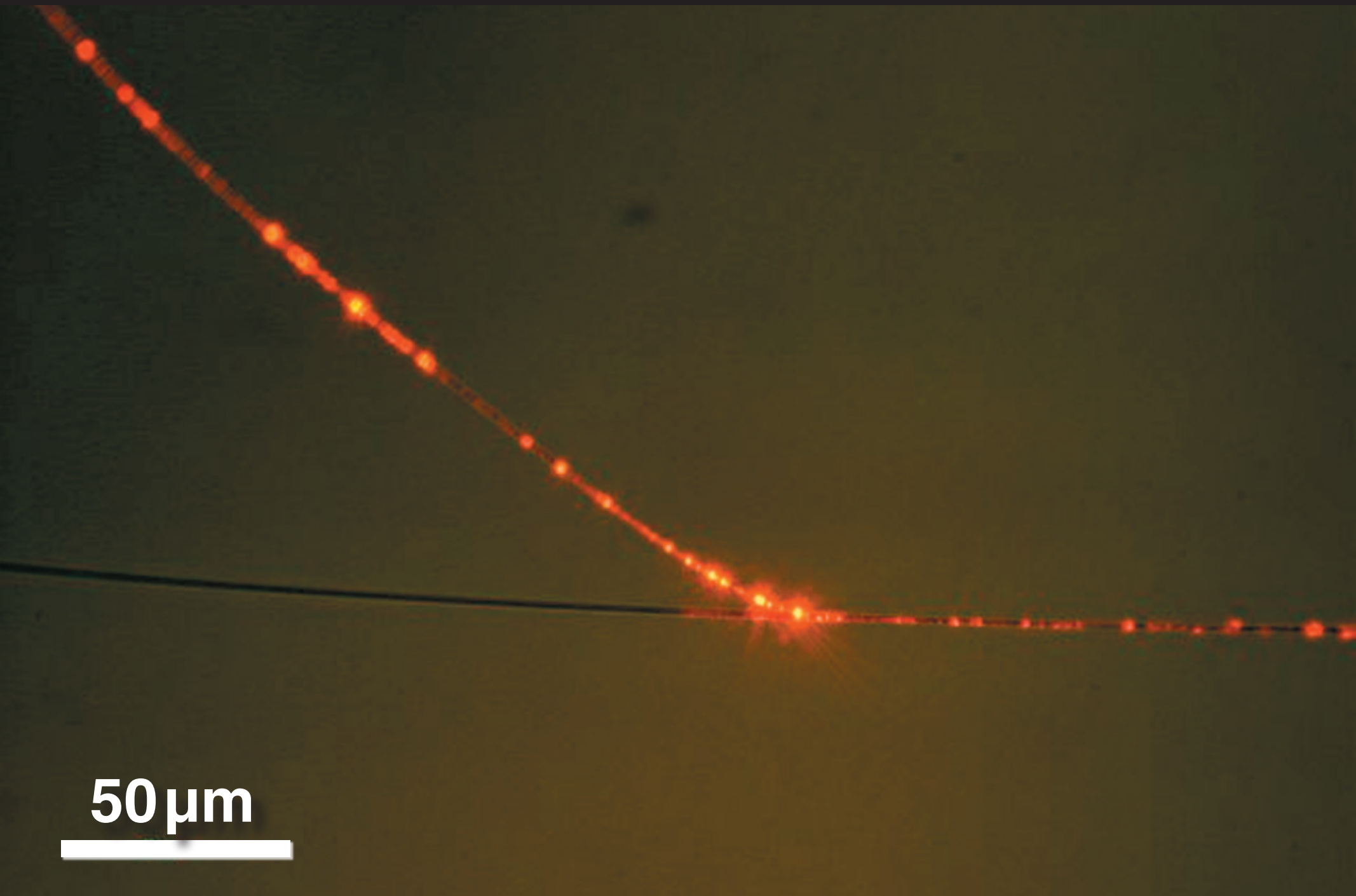

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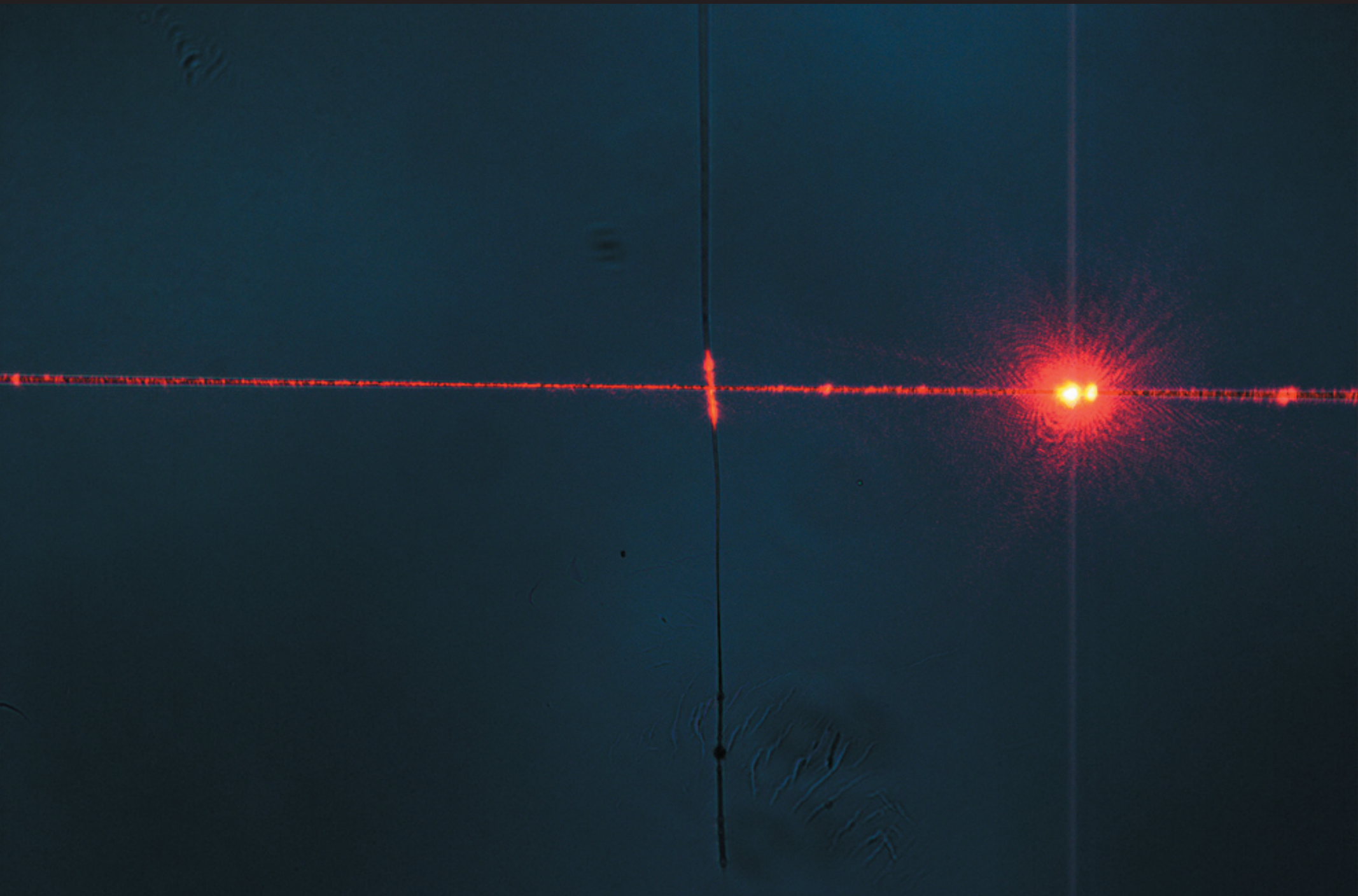
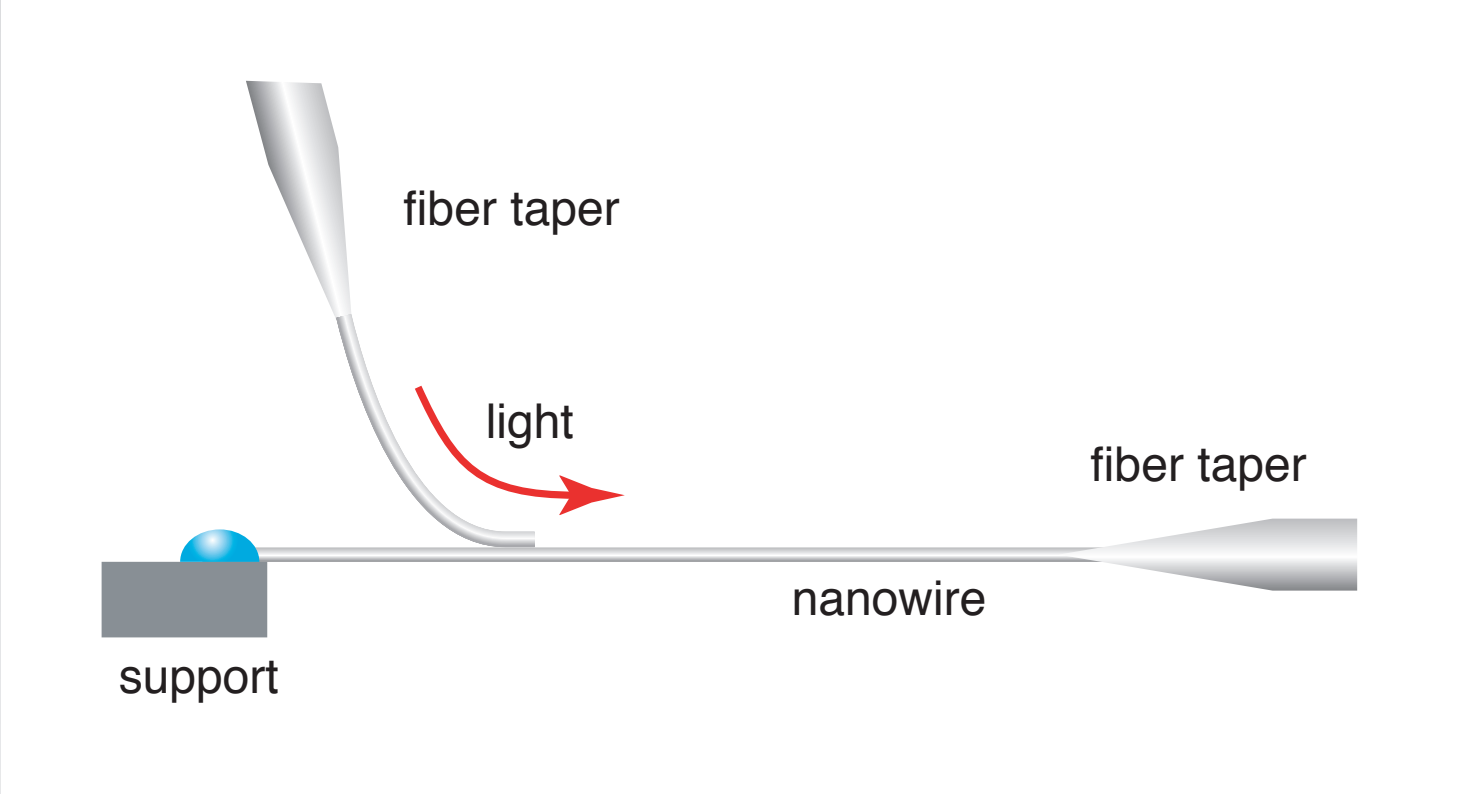


Optical properties

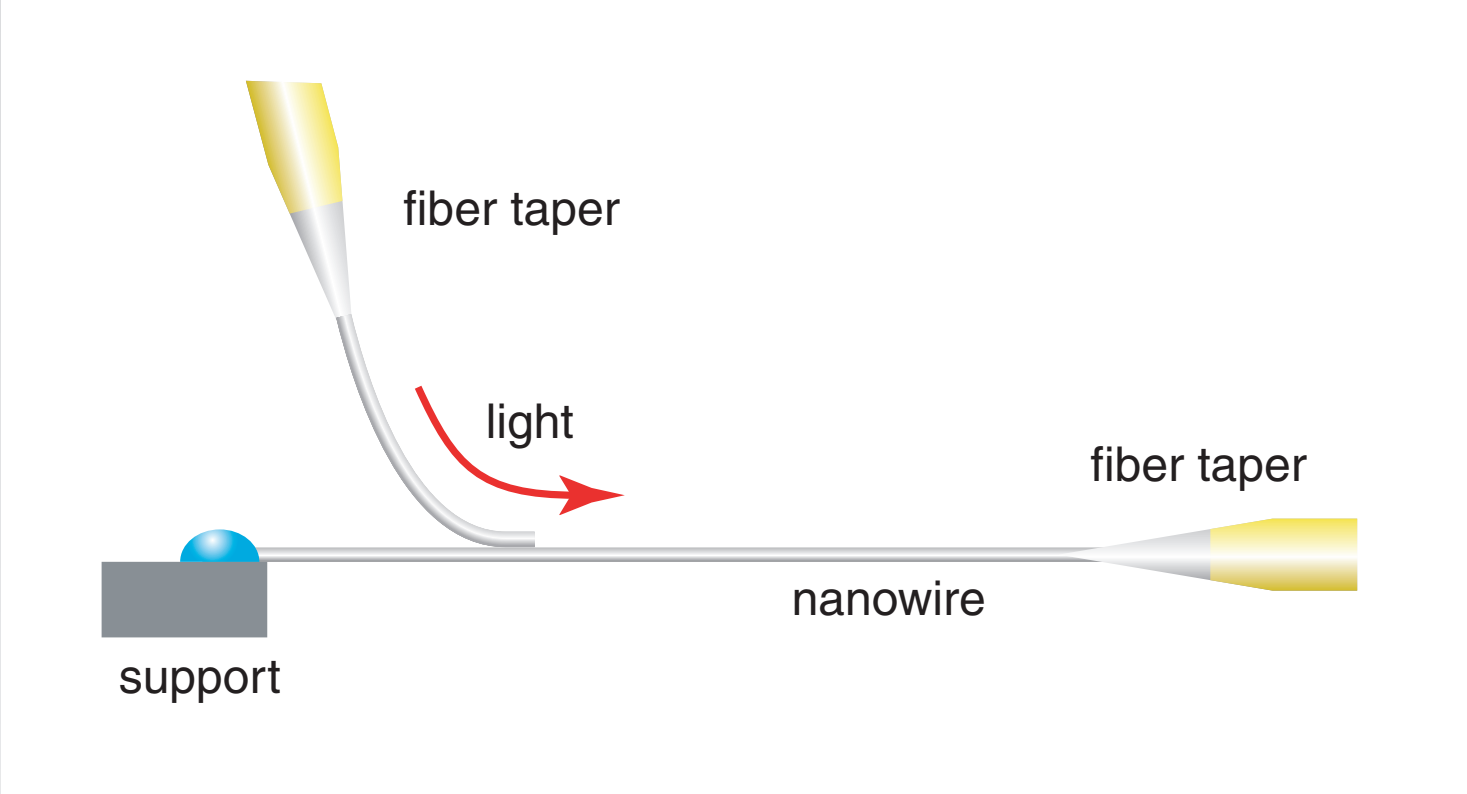
loss measurement



Nature, 426, 816 (2003)

Optical properties

loss measurement



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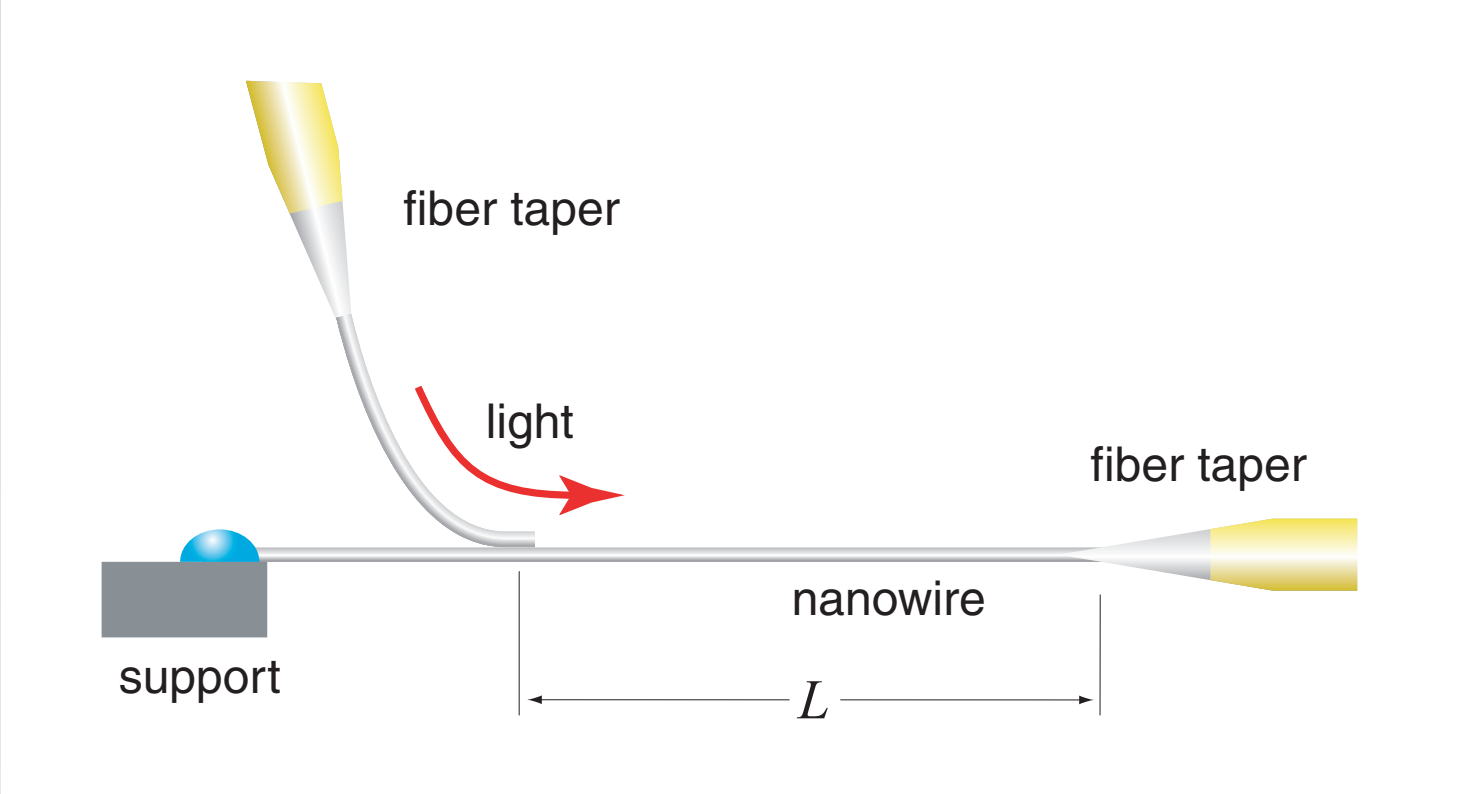

Nature, 426, 816 (2003)

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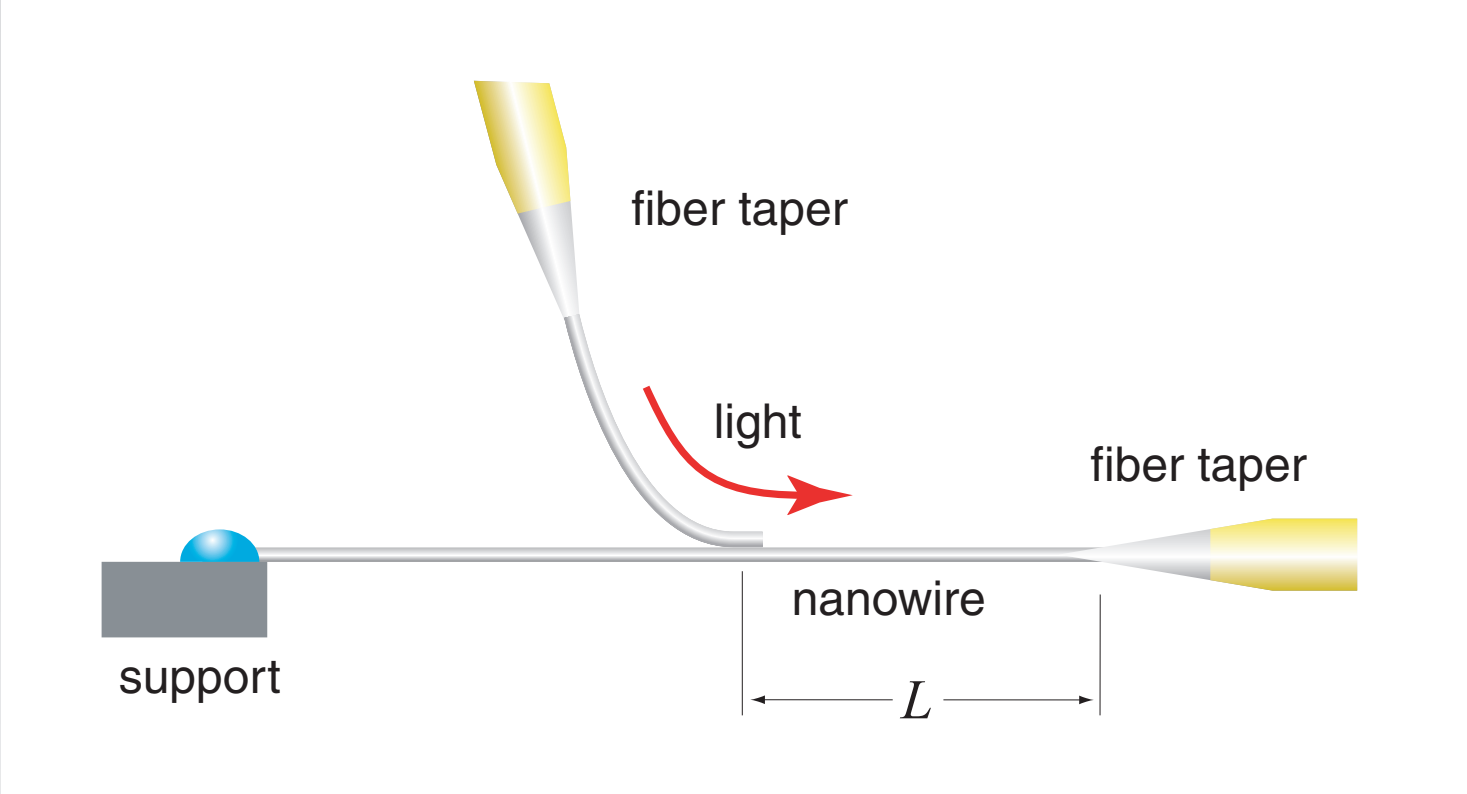

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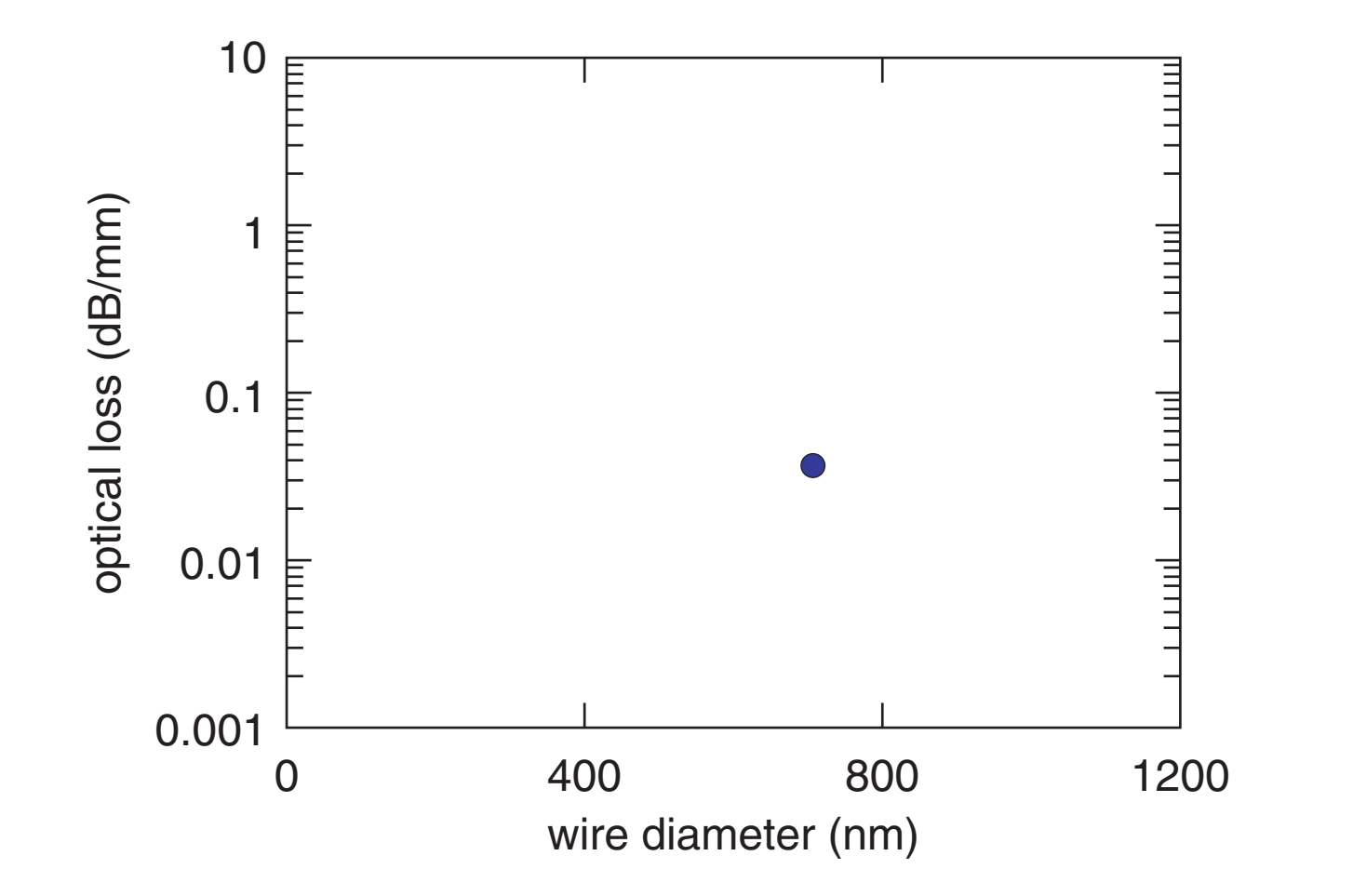

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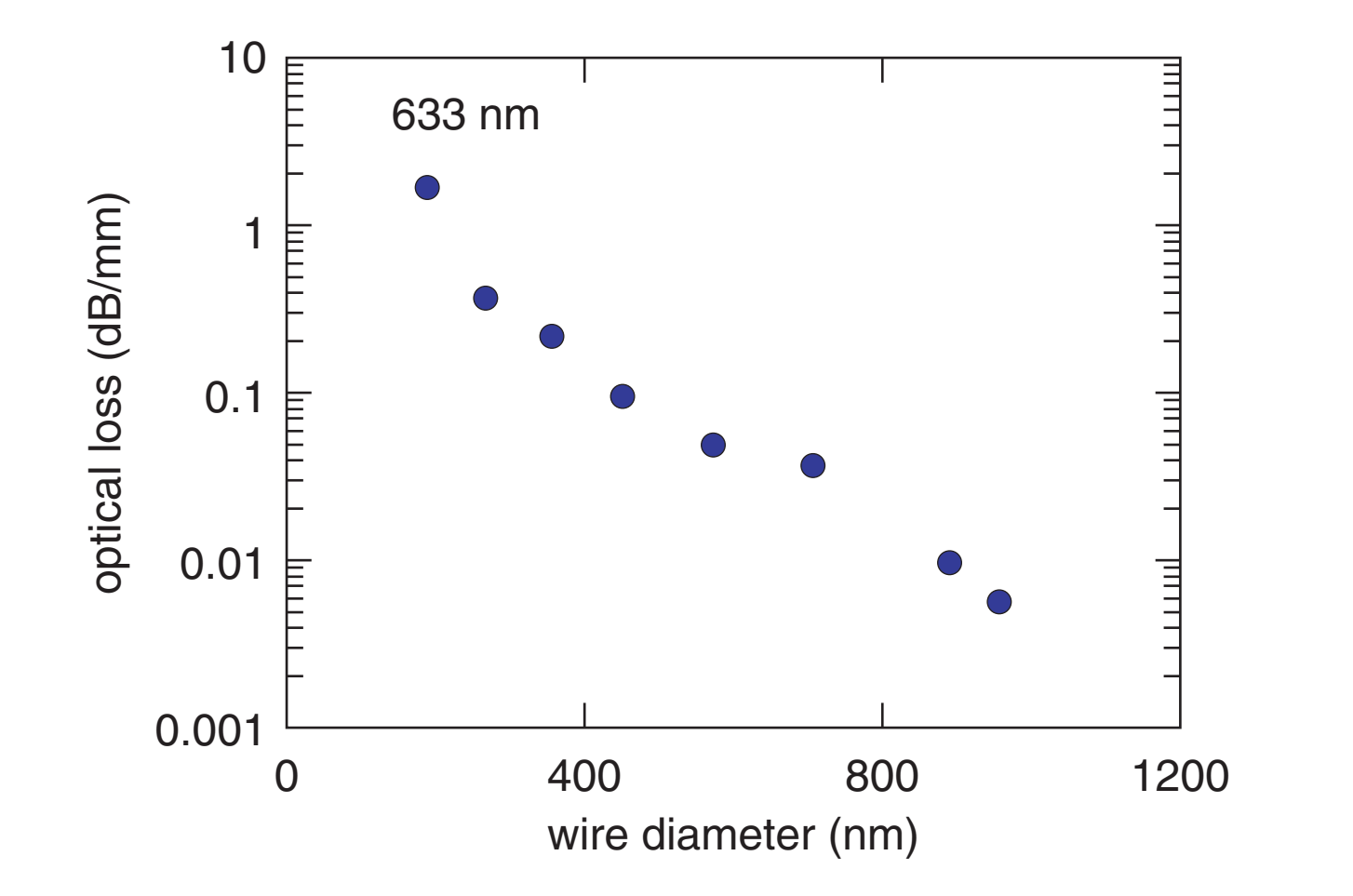

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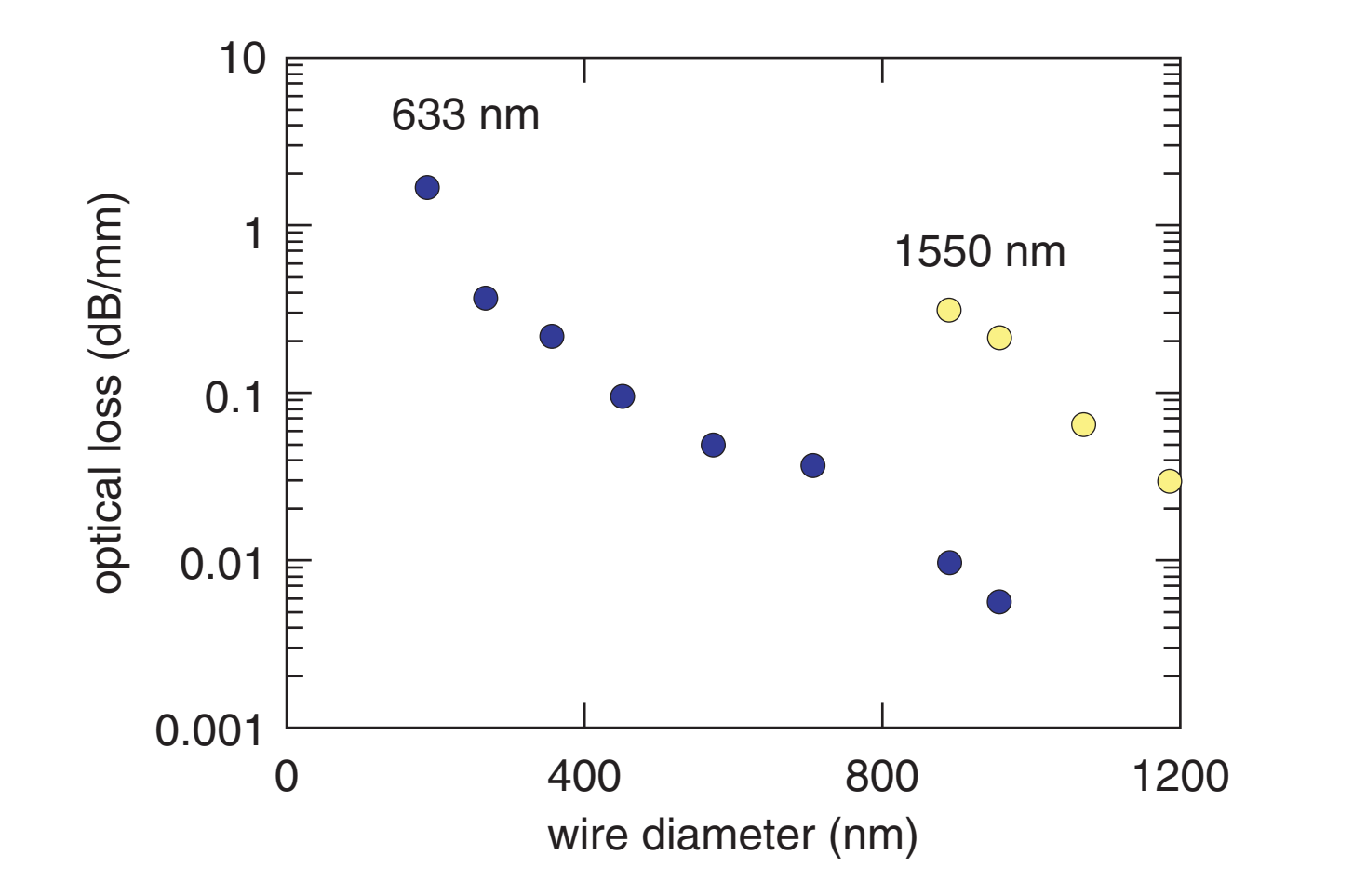

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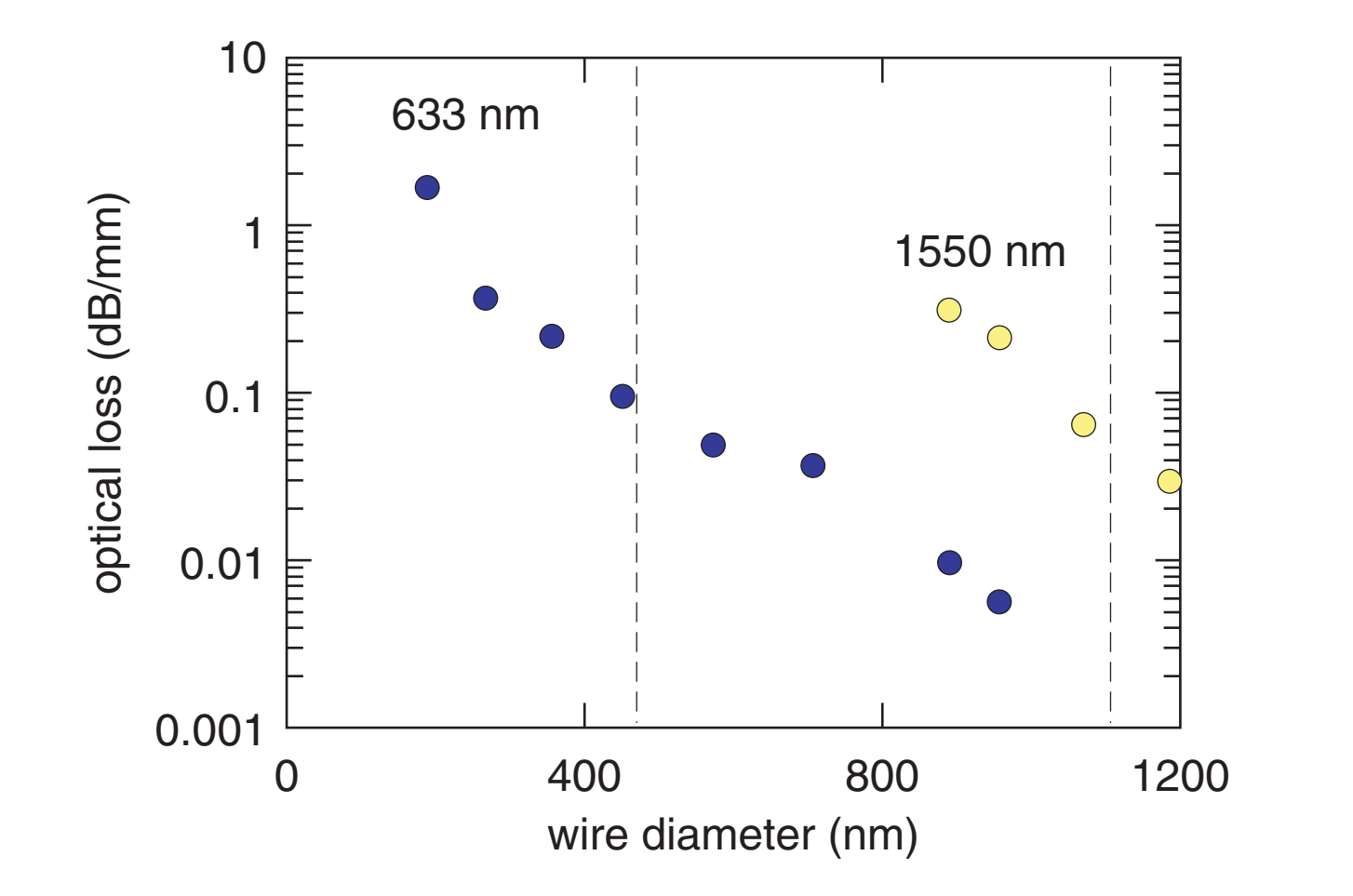
Optical properties

loss a single-mode diameter < 0.1 dB/mm



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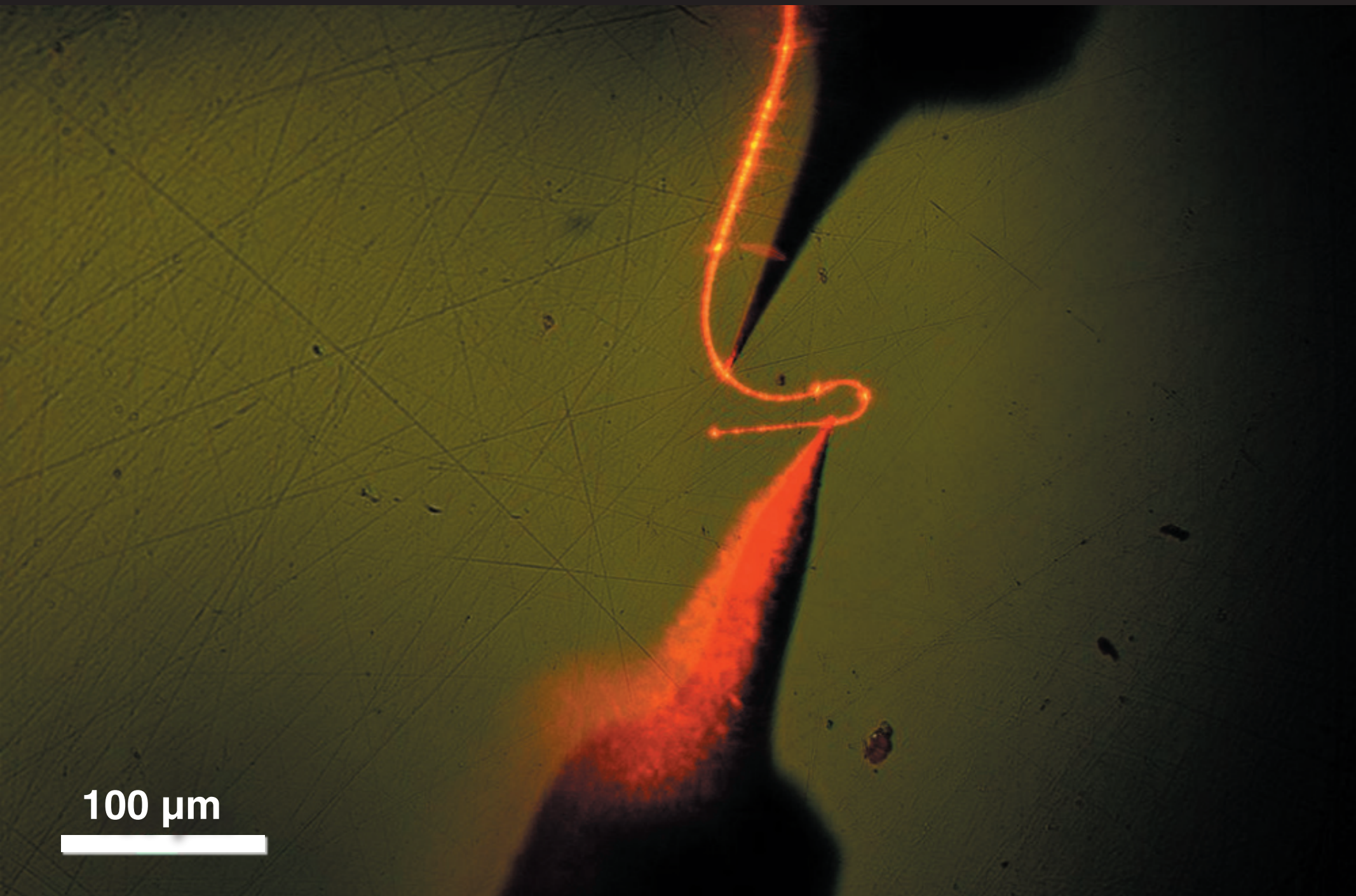

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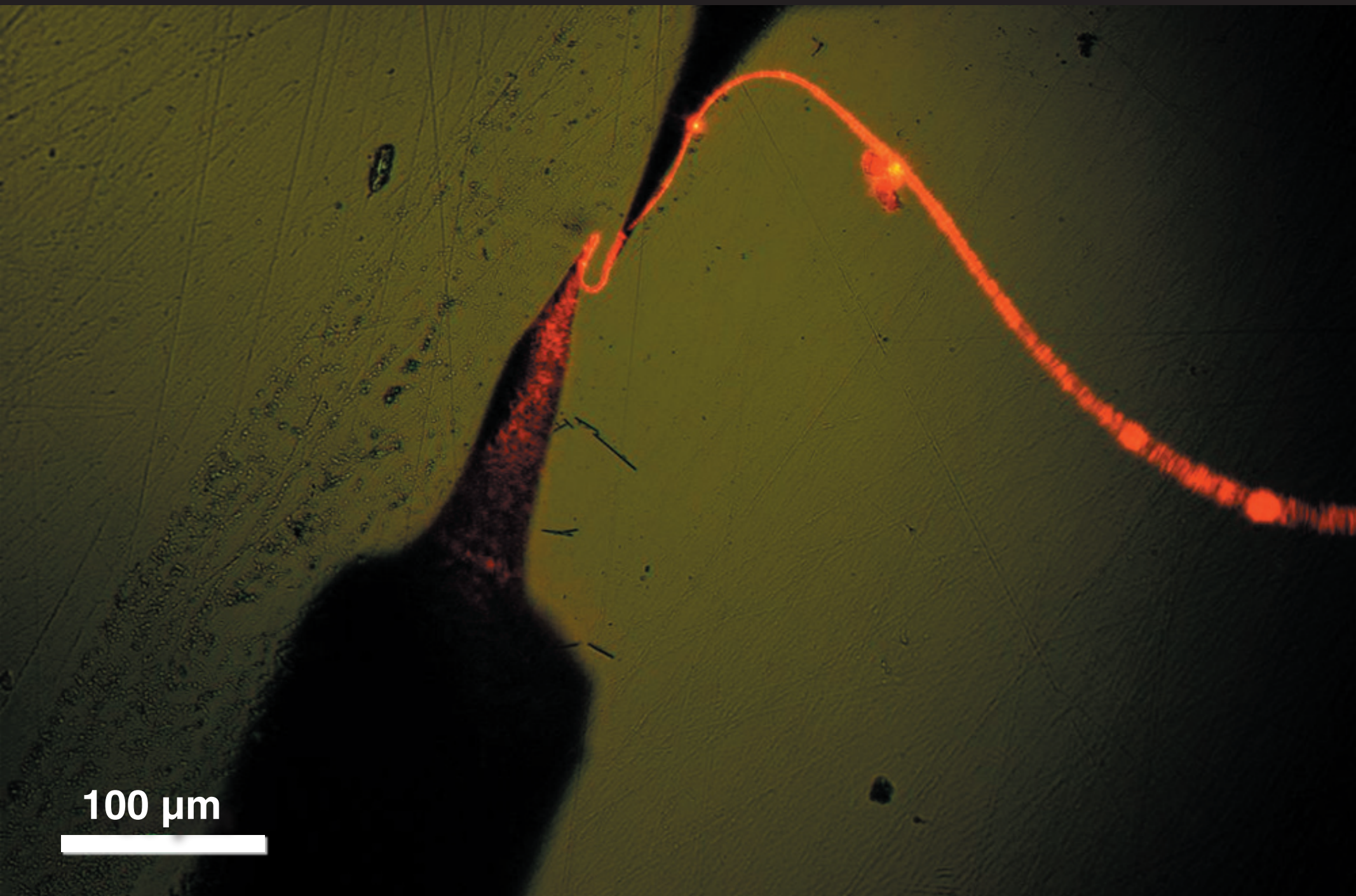

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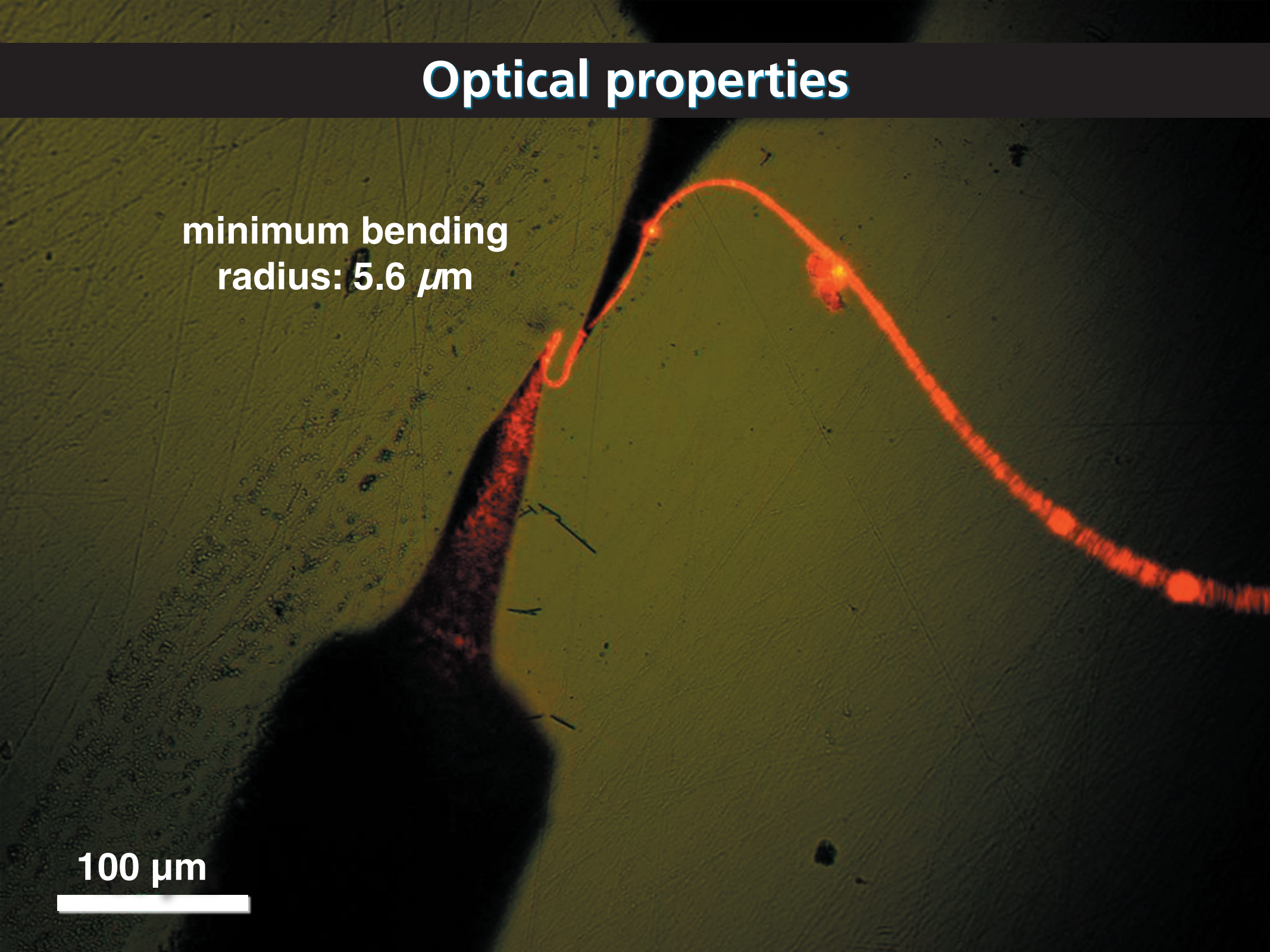

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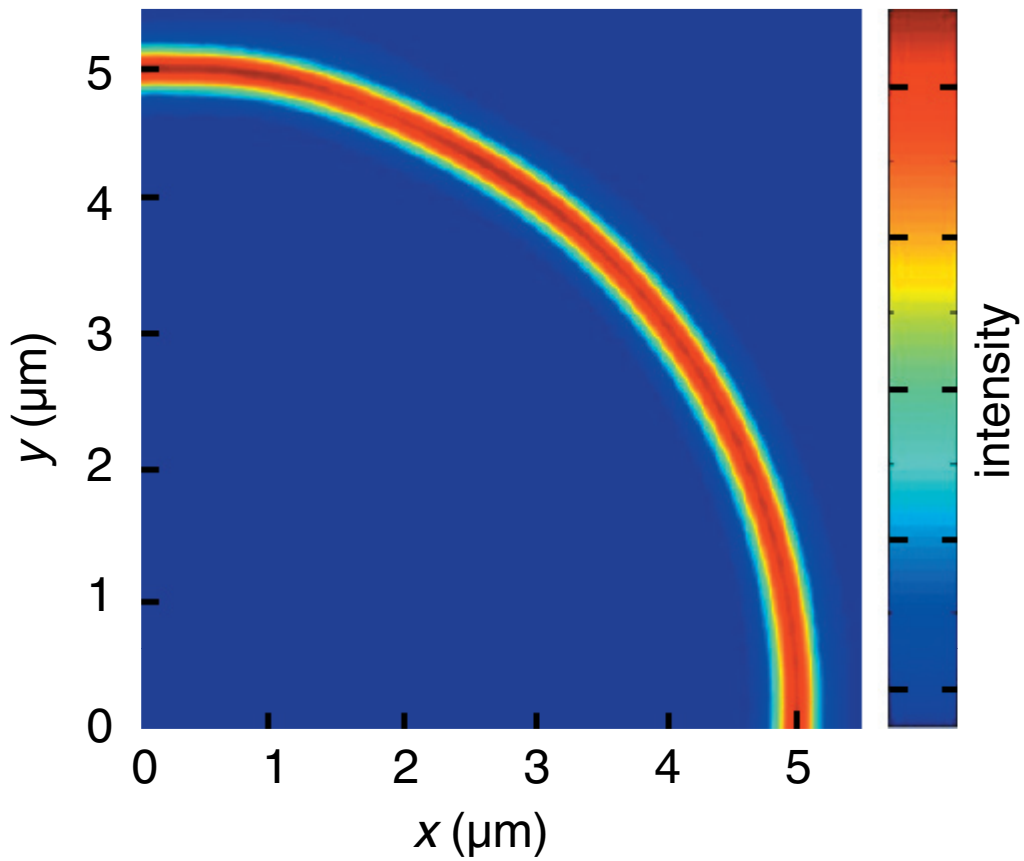
virtually no loss through 5 μm corner!