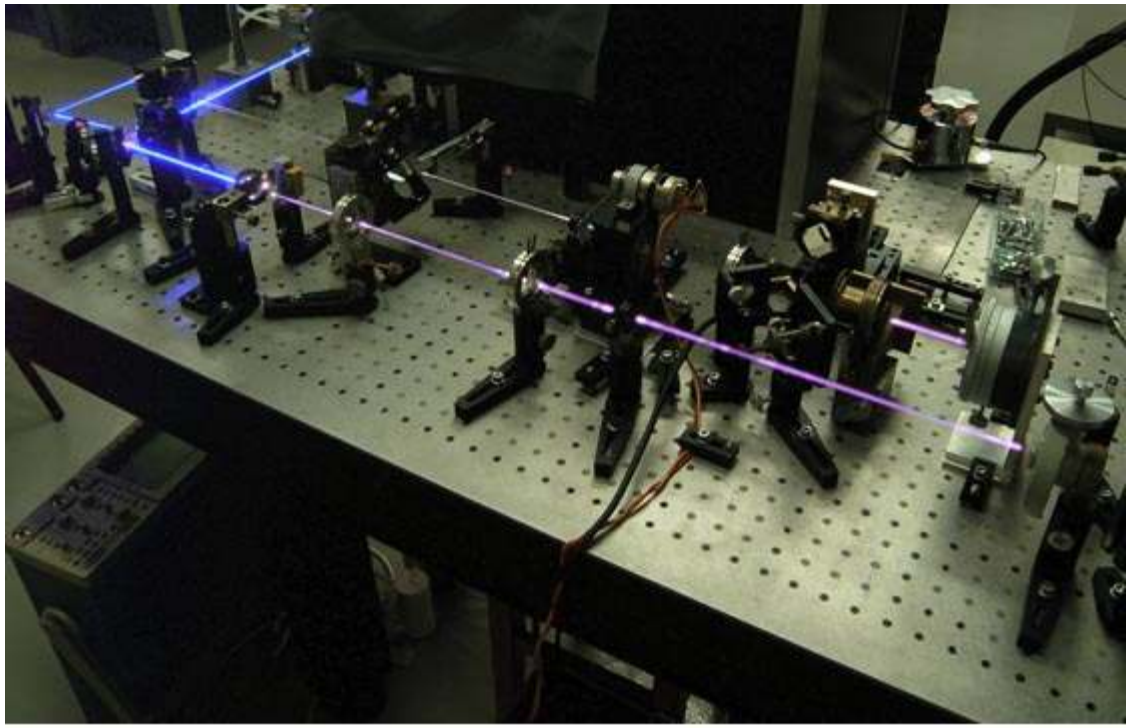
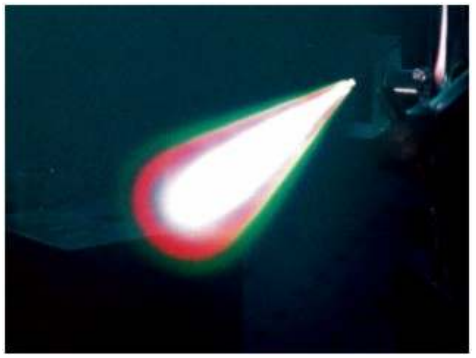
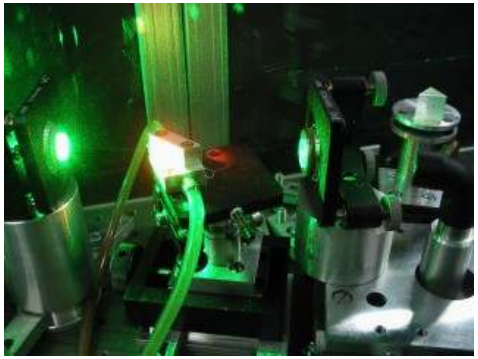
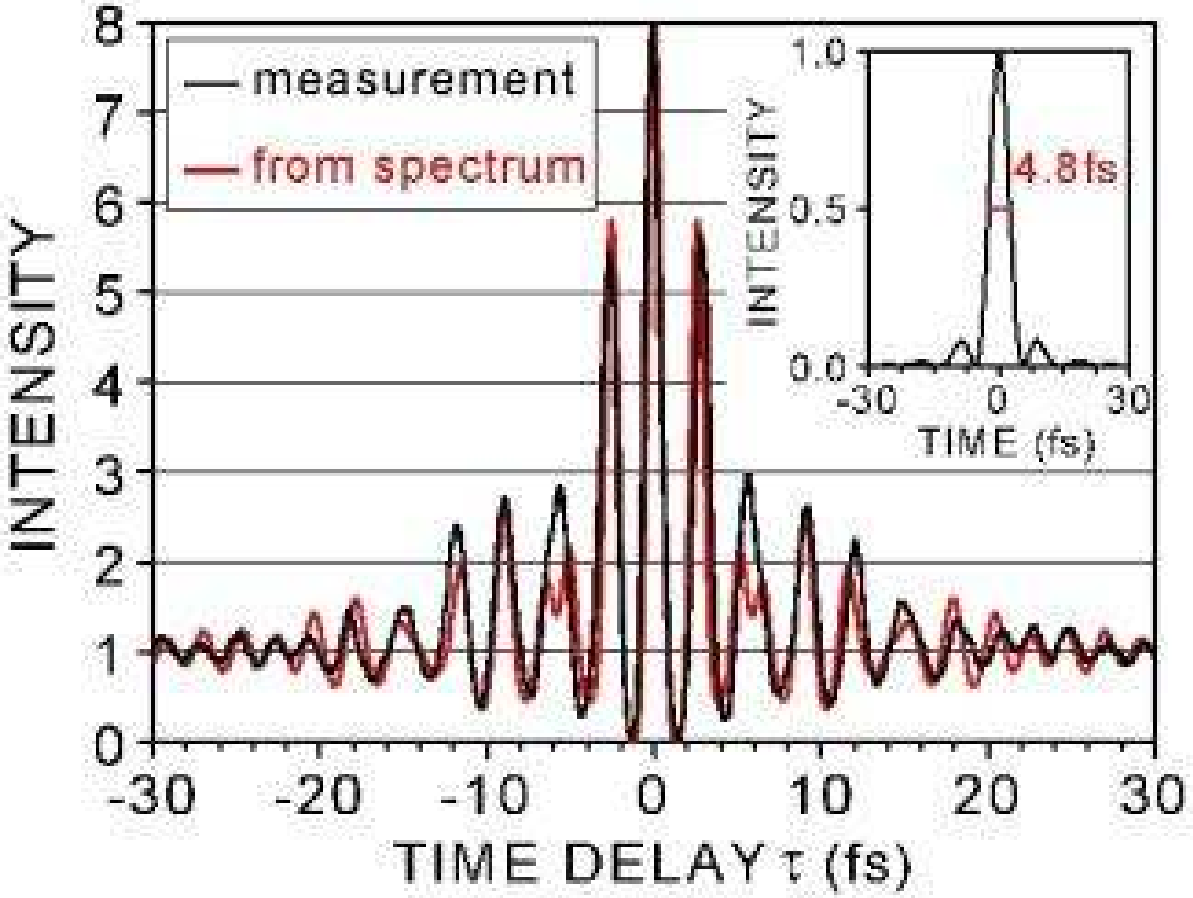
Dr Piotr Wasylczyk

Nieliniowo, adaptacyjnie i femtosekundowo, czyli ekstremalnie w optyce.

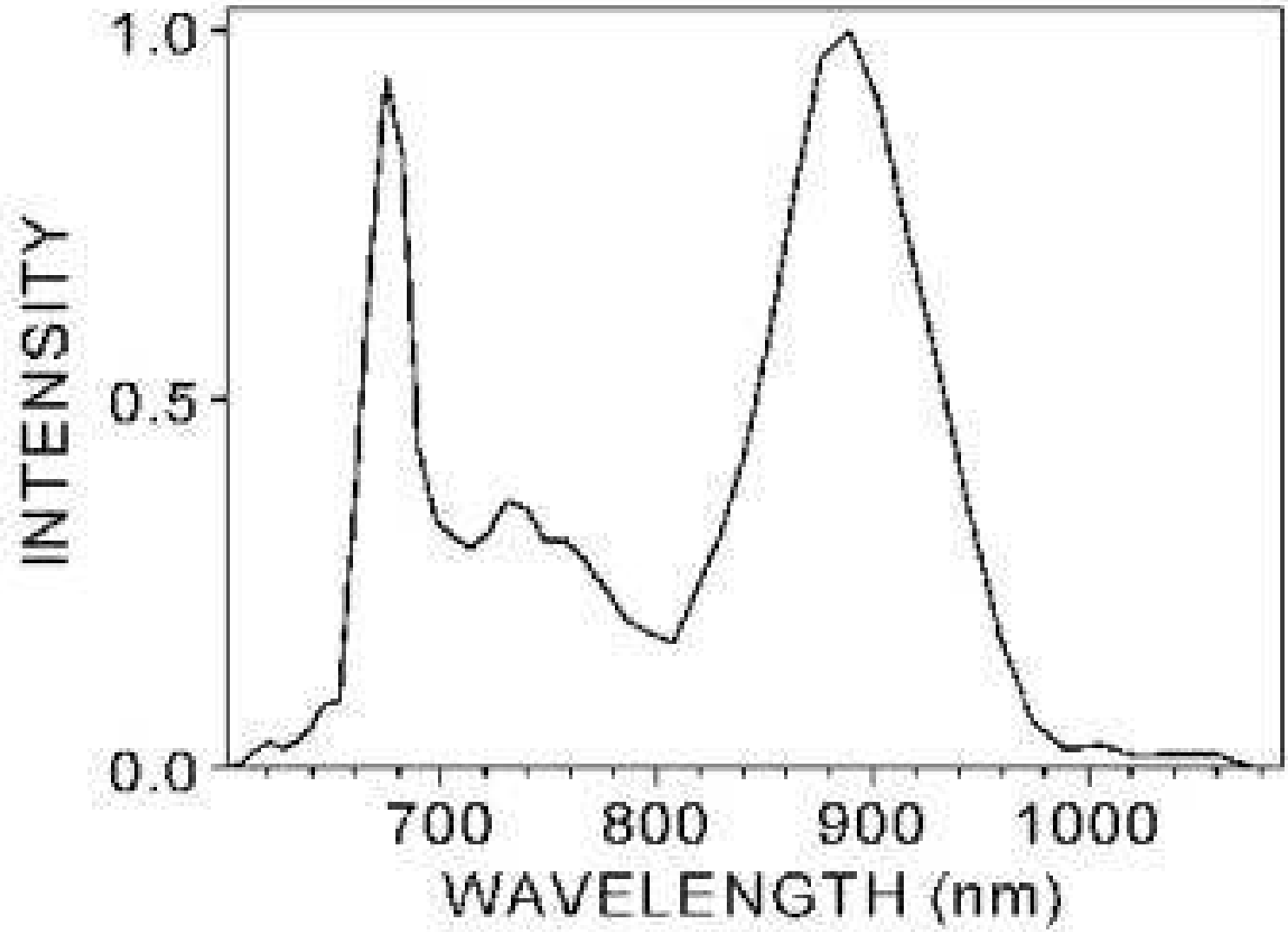




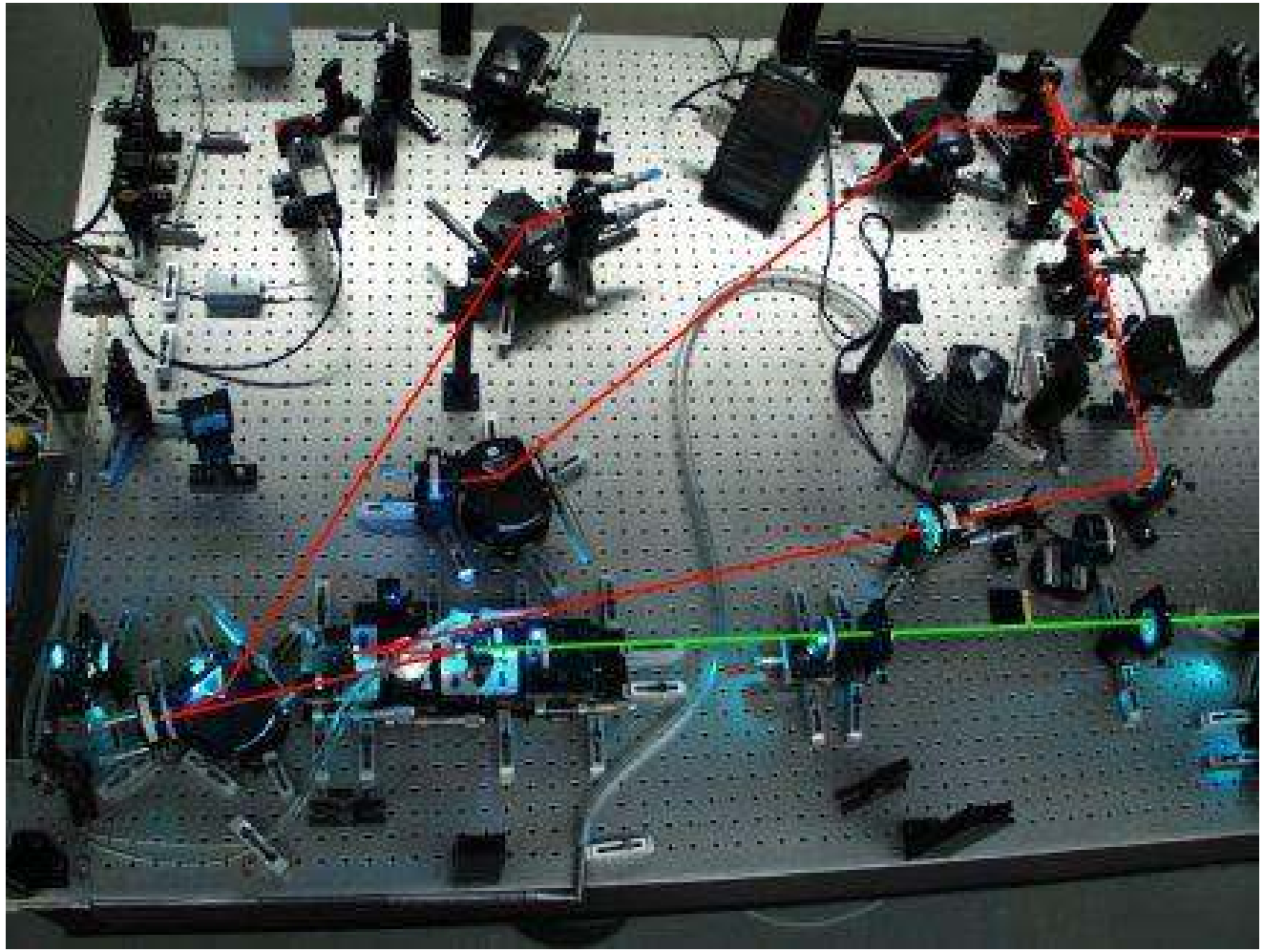



measurement
from spectrum
INTENSITY
TIME DELAY τ (fs)
4.8fs
TIME (fs)

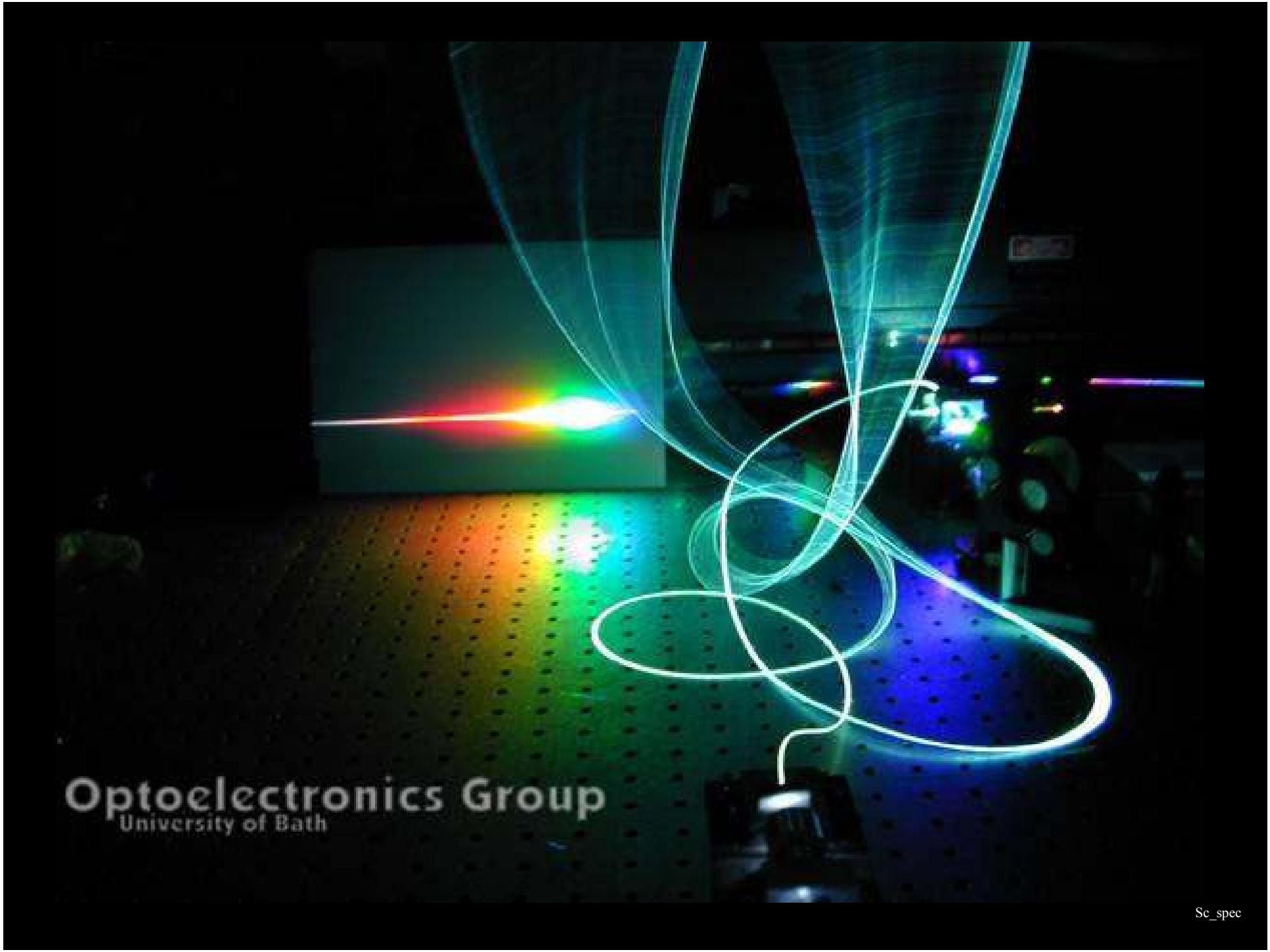
Fs_spctr



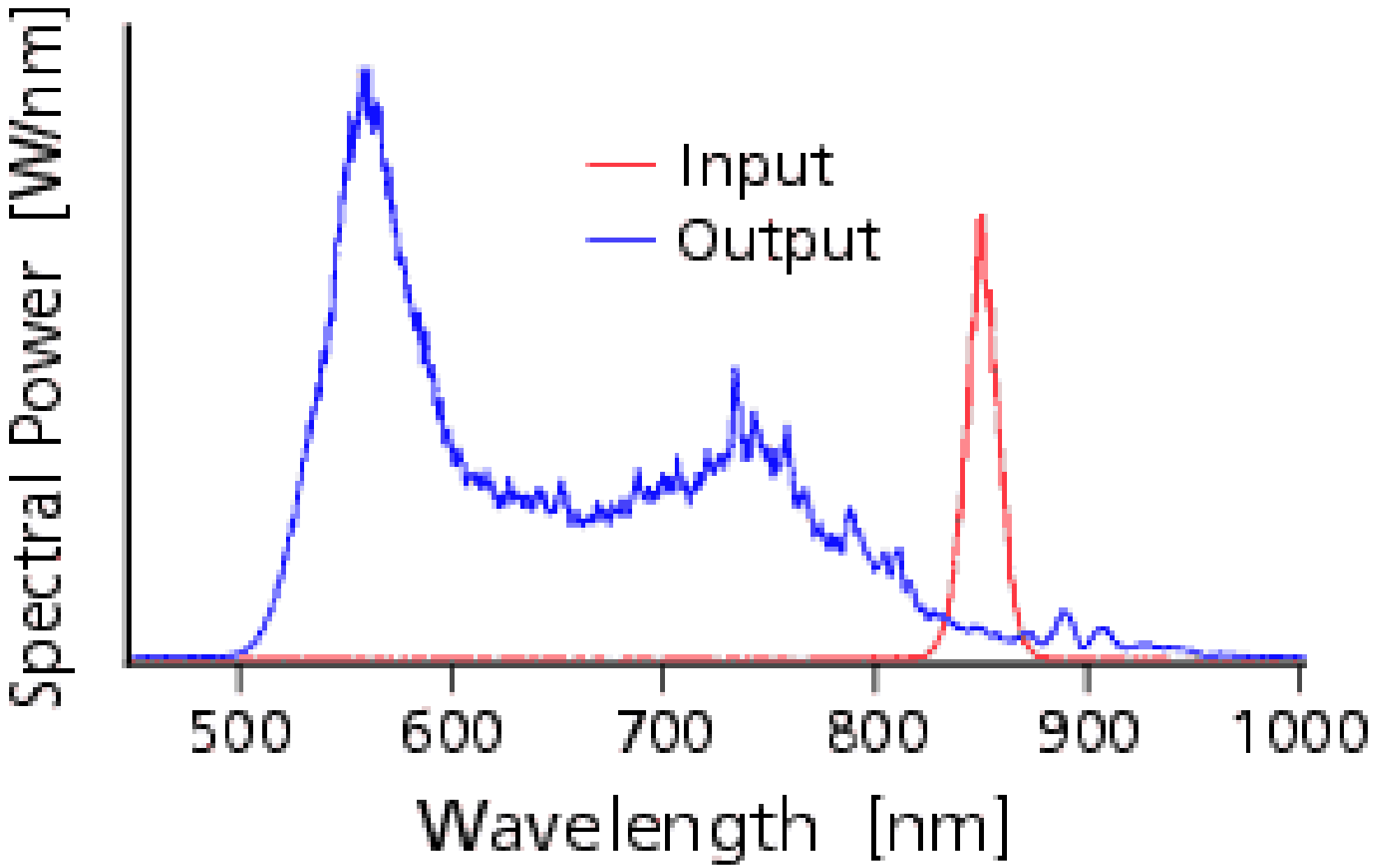
Fs_las



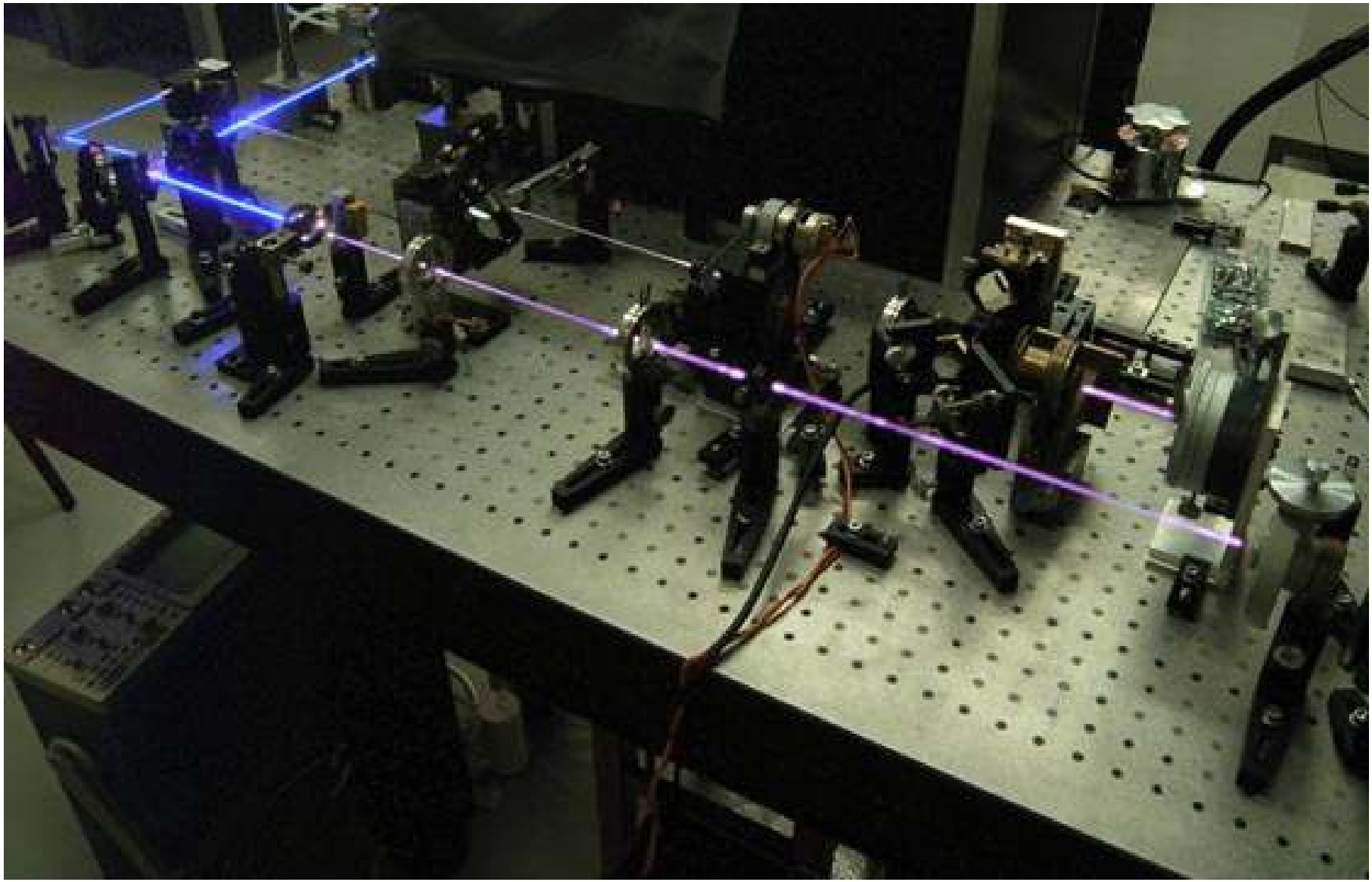
Sc_pic



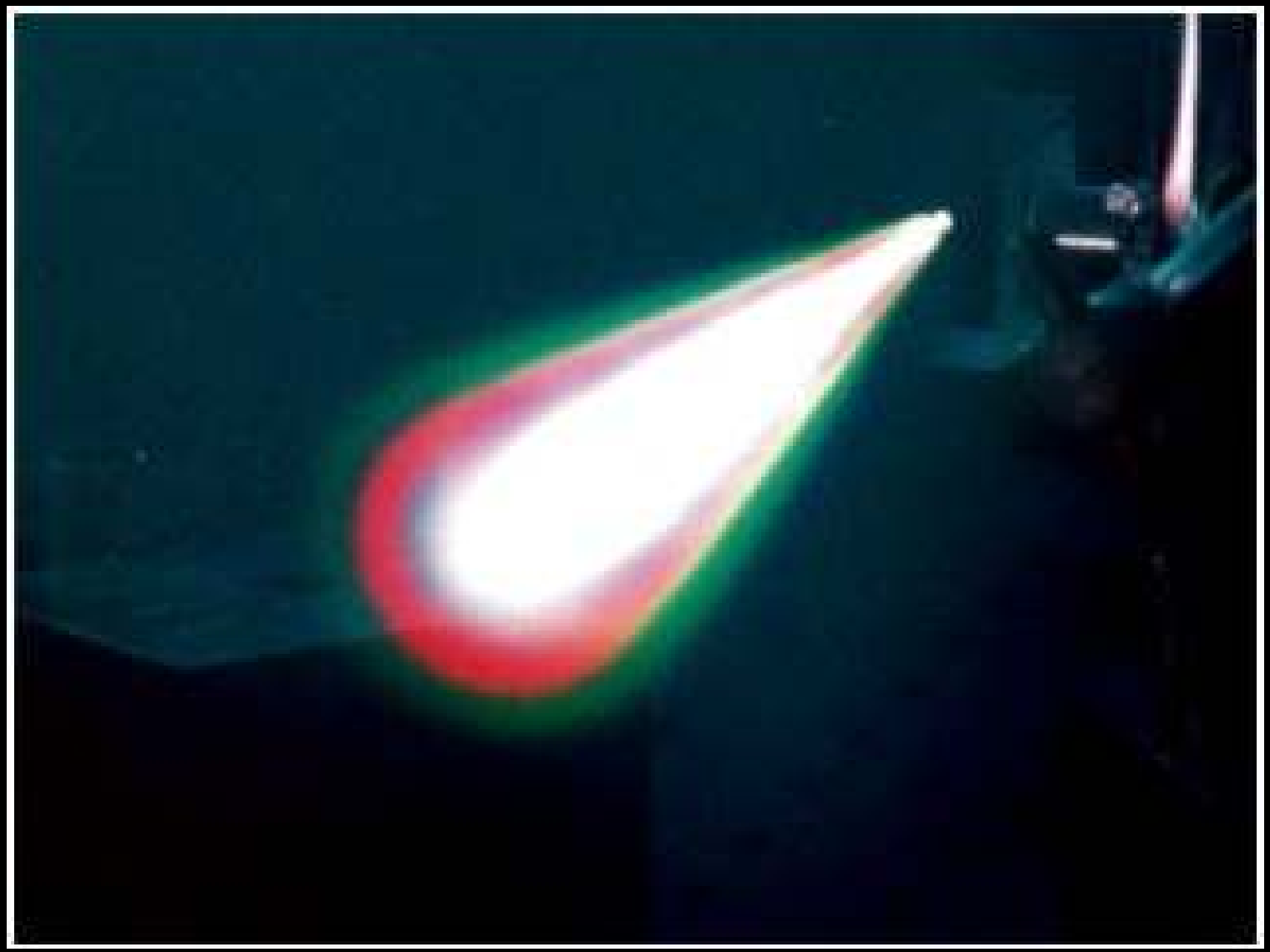
Sc_spec


Spectral Power [W/nm]
Input
Output
500
600
700
800
900
1000
Wavelength [nm]

tabs

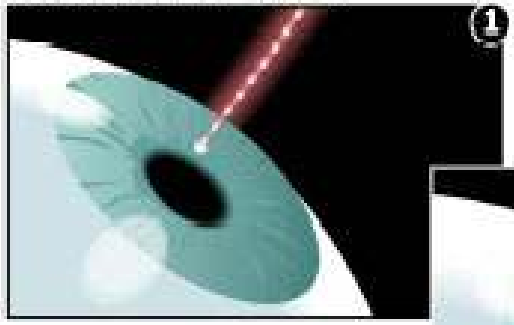


cone

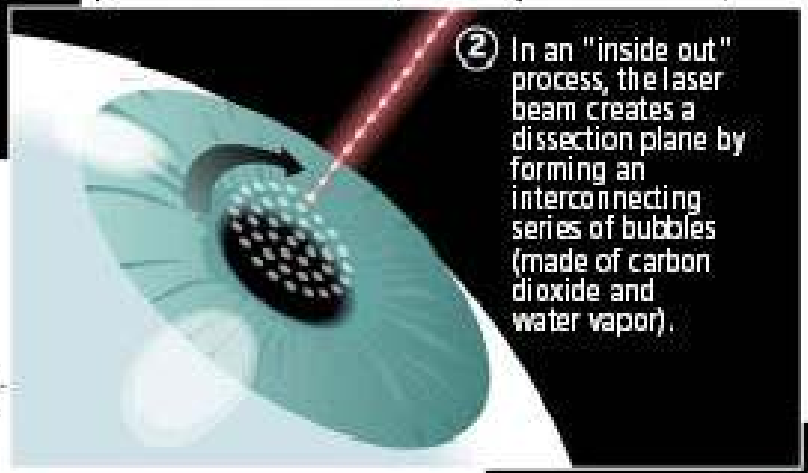


surg

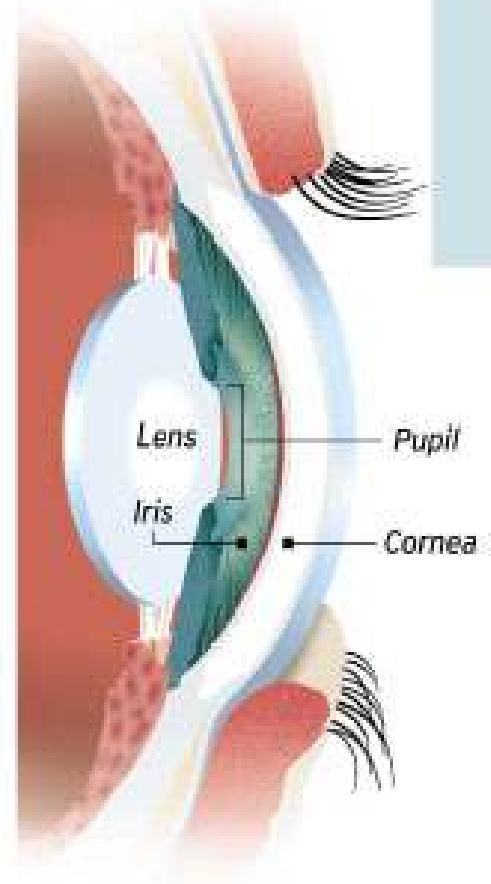
INTRALASE FS Laser



1 IntraLASIK software directs the INTRALASE FS Laser to optically focus its beam into a tiny, 3 micron spot of energy that passes harmlessly through the outer layers of the cornea until reaching its exact focal point within the stroma (central layer of the cornea).

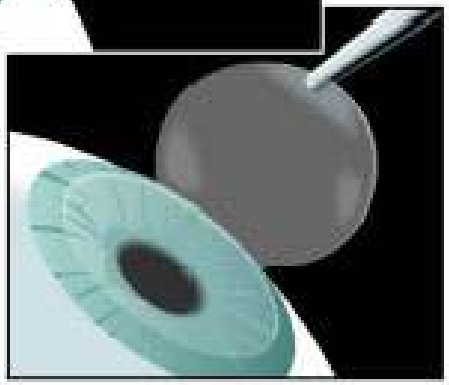


2 In an "inside out" process, the laser beam creates a dissection plane by forming an interconnecting series of bubbles (made of carbon dioxide and water vapor).



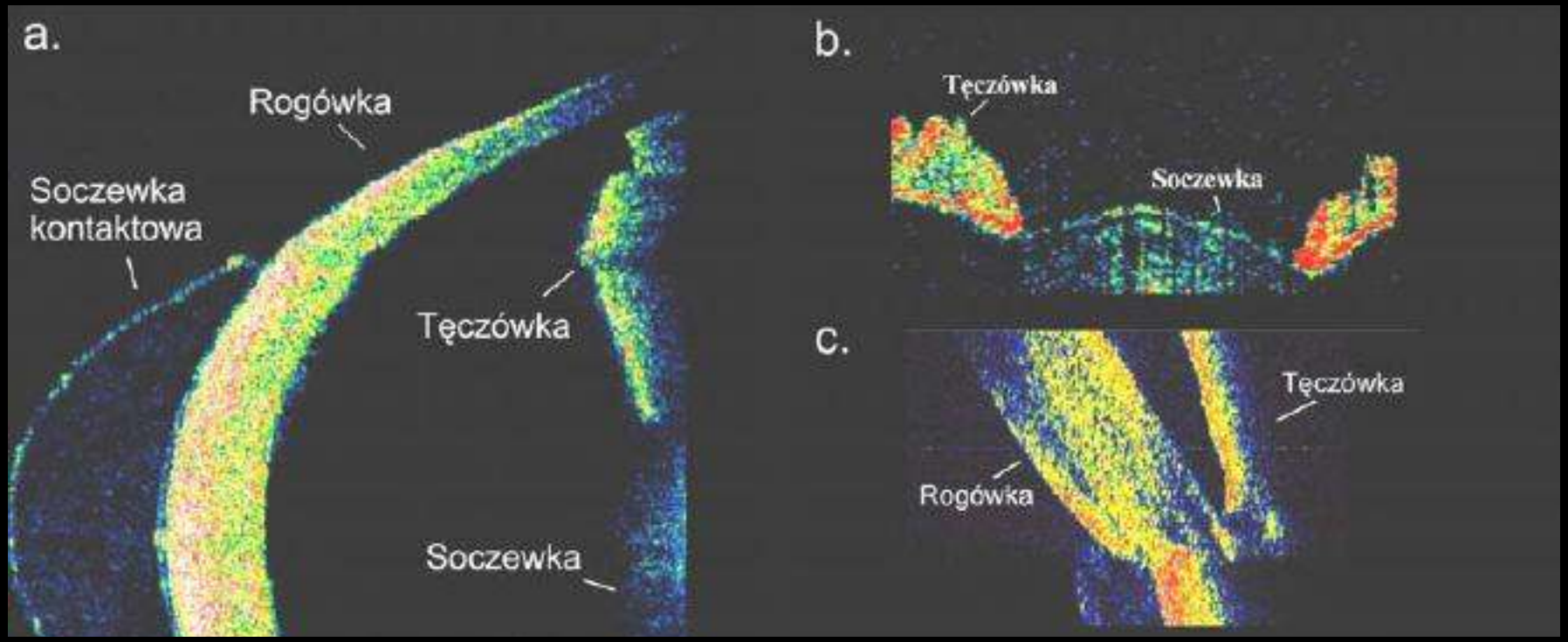
Eye anatomy at a glance

The cornea is a dome-like structure of transparent tissue that extends over the lens, pupil and iris. The cornea's curvature affects the way incoming light rays are bent so that they focus optimally onto the retina for maximum visual acuity.

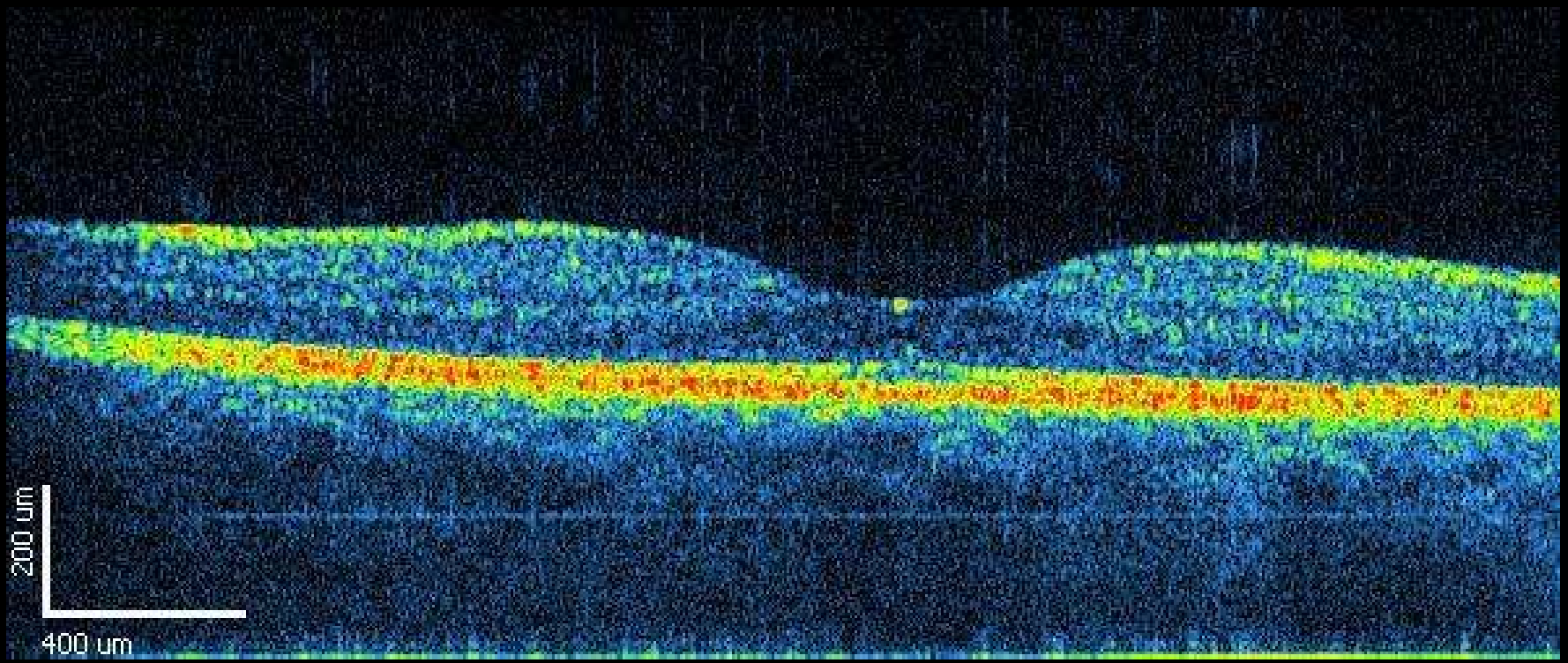


3 The laser beam stacks a pattern of bubbles along the periphery of the ablation plane, leaving an uncut section of tissue to act as a hinge. As with a traditional LASIK approach, the surgeon then folds the tissue back to expose the underlying corneal layer to prepare for the excimer laser treatment that will re-shape the cornea.

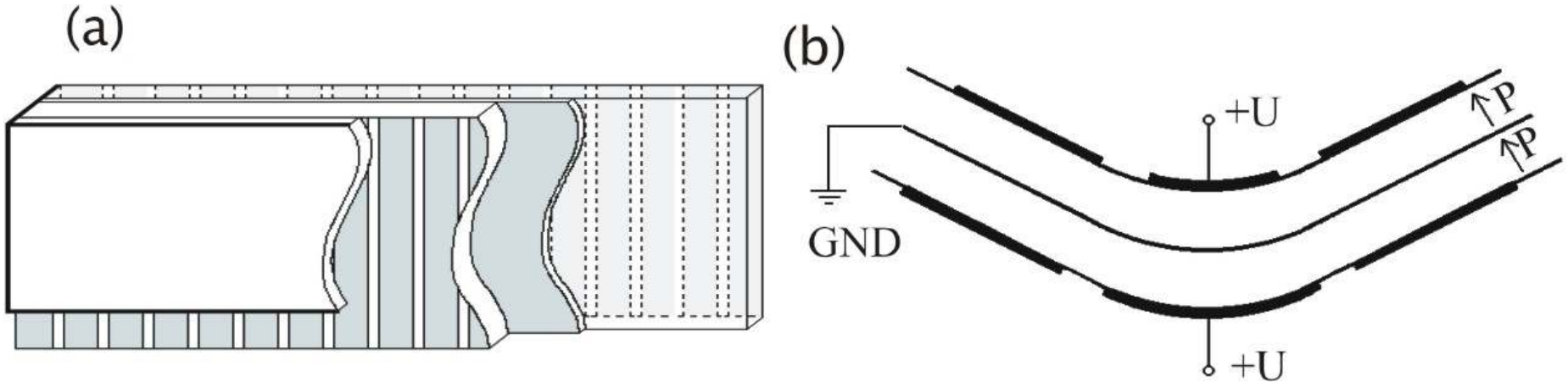
Oct_im


a.
Rogówka
Soczewka
kontaktowa
Tęczówka
Soczewka
b.
Tęczówka
Soczewka
c.
Tęczówka
Rogówka

siatk

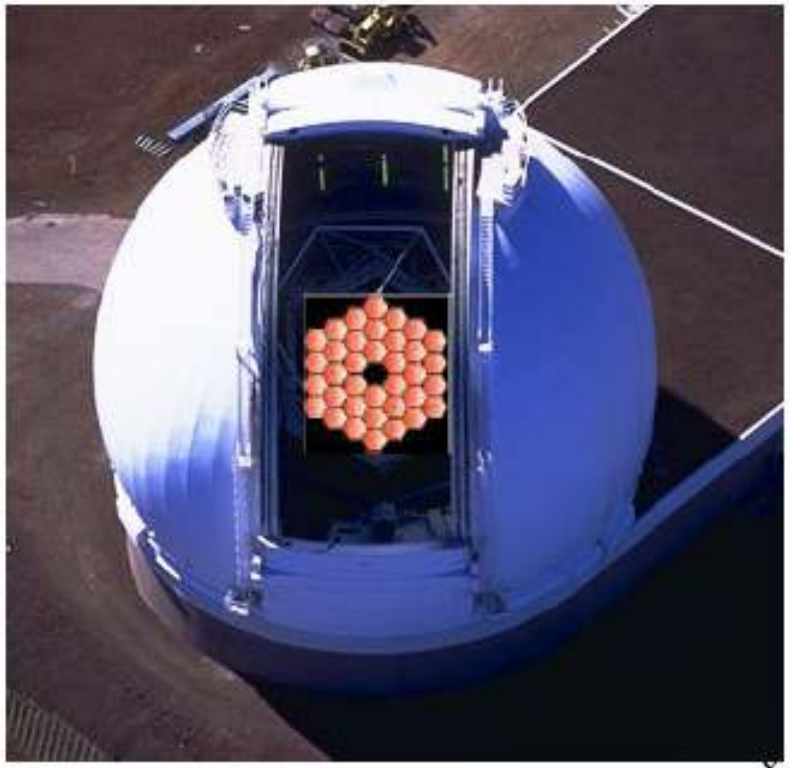


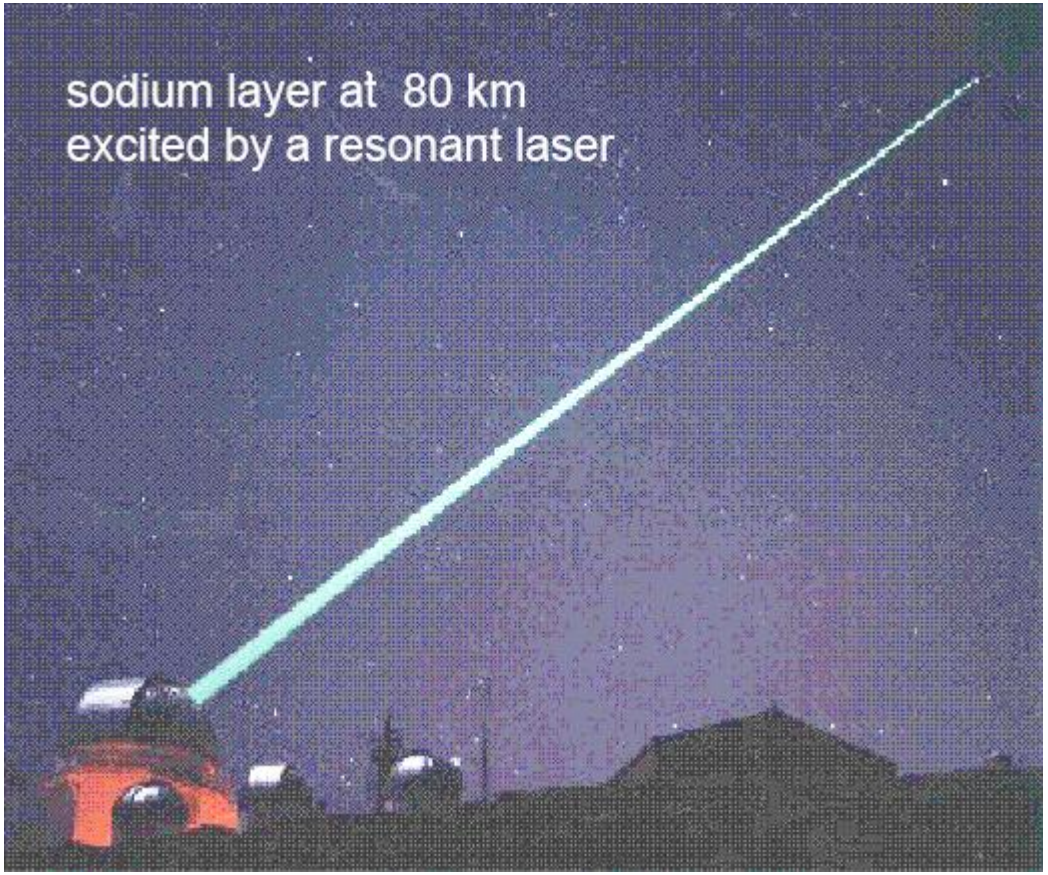
Lustro_p


(a)
(b)
+U
P
P
GND
+U

keck

- The rule of classical thick mirrors to remain rigid under gravity : thickness = diameter / 6
- For an 8m telescope : 130 cm ! ; the safe cooling of such a mass of glass is not possible in a decent time
- Solutions :
  - cut into pieces the primary : Keck telescope
  - Build a thin mirror and control it with active supports : VLT





moon