

SURFE²R SOL

nanj[on

stimulating optical lid

Direct recording
of optically induced bioelectrical
currents from light driven pumps
and channels.

**Novel and flexible
experimental design options**
combining SSM-electrophysiology
and optical stimulation with high
temporal resolution and sensitivity.

Add-on for the SURFE²R N1
easy installation

High resolution real time
electrophysiological readout
for light driven pumps
and channels. Suitable
for eucaryotic, bacterial
or organellar proteins
and membranes.

Easy to use,
robust, LED based, software-
aided, optical stimulation.
Exchange the LEDs within
seconds to stimulate with eight
different wavelengths.

Applications

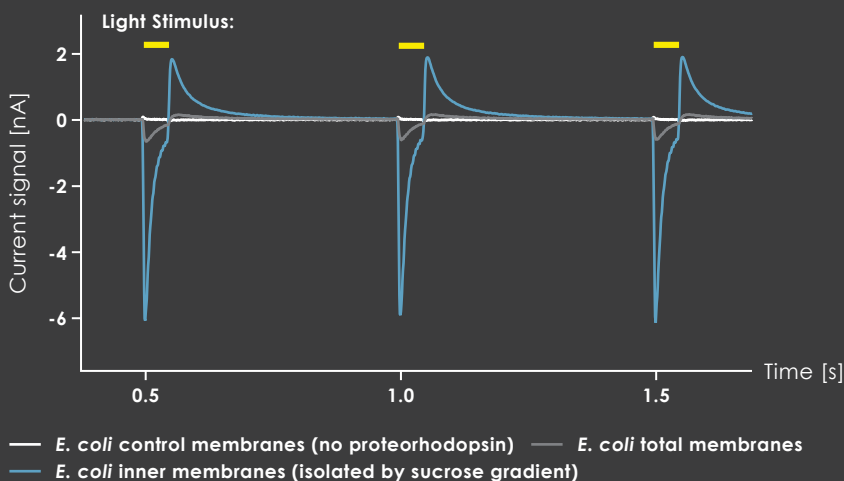
Direct readout of membrane
currents generated by light driven
pumps like Bacteriorhodopsin

Readout of gradient driven ion
currents through optically triggered
channels like Channelrhodopsin

Use of caged compounds as
substrates (e.g. ATP)

Novel optogenetic applications,
e.g. using optical stimulation to
generate a membrane voltage

Repetitive Proteorhodopsin Activity in Different Samples:

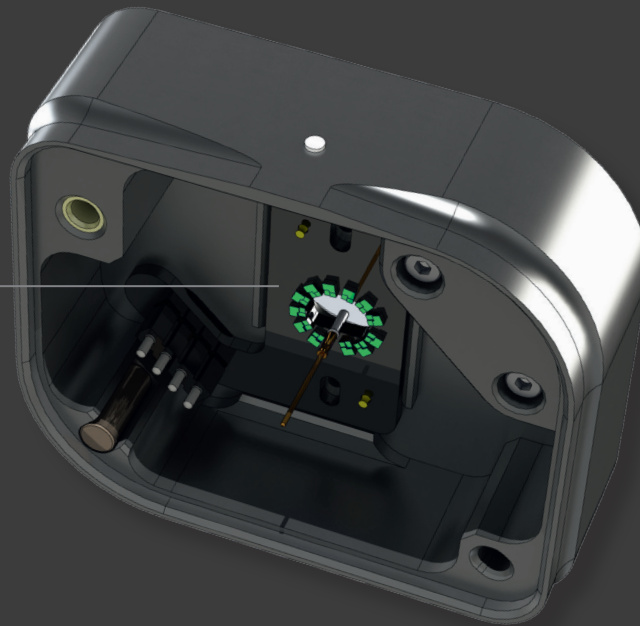


Data provided by Prof. Dimitrios Fotiadis, Institute of Biochemistry and Molecular Medicine, University of Bern.

SURFE²R SOL

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LED board



www.nanion.de

Addon compatibility

SURFE²R N1 v2.0 (starting 2017)

Parts included

SURFE²R N1 SOL chamber and lid with 12 individual LEDs

Default wavelength 450nm, others can be requested

Side panel including command electronics

Software protocol generation and for synchronized recordings

Remote guided installation

Available LED boards – exchangeable within seconds

Dominant wavelength:

Deep Red: 660 ± 10

Red: 632.5 ± 12.5

Red-Orange: 615 ± 5

Amber: 587.5 ± 2.5

Green: 530 ± 10

Cyan: 500 ± 10

Blue: 470 ± 10

Royal Blue: 450 ± 10

Stimulation

Light (LED) and/or fluidic

Software aided, synchronized workflows

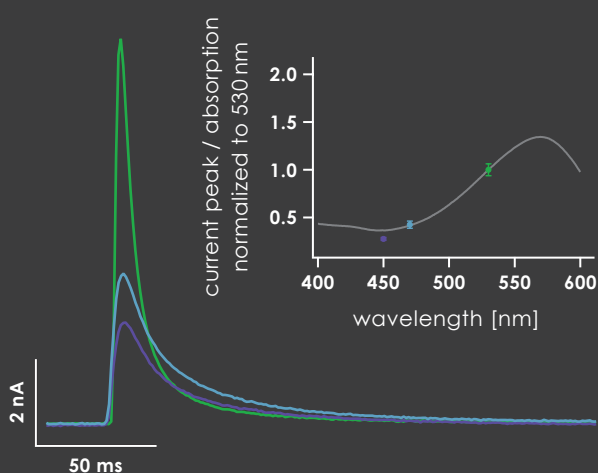
LED operating current

1 to 500 mA

LED stimulation duration

10ms to 10s, single pulse or pulse frequency setting

Bacteriorhodopsin stimulated with different wavelengths:



BR activity at different light intensities:

