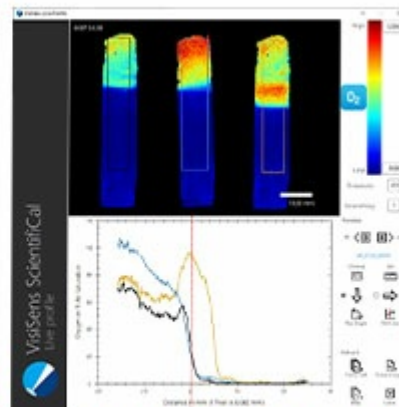![PreSens PRECISION SENSING logo]

Gradient Development in Soil Water Interfaces

New Live Plugins

Dear Dr. Max Mustermann

Non-invasive and continous gradient measurement over interfaces or roots gets to a new level! And you are invited to be part of it. The evaluation of spatio-temporal gradients is now facilitated and goes live with the modular VisiSens TD 2D imaging system and the specialized new software plugins. They allow you e.g. to compare a multitude of regions of interest within one measurement, to directly benchmark your sample with blanks or investigate different samples in one experiment. Even combinations of different analytes are possible. Besides the essential product information this newsletter also shows some of our matching application examples.

Any questions to your set-up? Contact your expert Dr. Robert Meier!

Your PreSens Team

Product Information

## VisiSens TD - The Modular System for O_2, pH and CO_2 Mapping

The VisiSens TD is a modular imaging sytem that can read out up to three analytes in one system. Planar sensors are placed on the sample area or in different cavities and the fluorescent sensor signals are read out pixel by pixel with a camera. Choose the options that you need for your experiment:

- multiple sensor types combinable in one field of view
- variable sensor and measurement geometry
- 12-bit detector
- adaptable field of view, microscopic, 4 x 4 cm² or up to 30 x 25 cm²
- time-lapse slide shows or recordings

>> Learn more about the measurement principle of our imaging technology, methods to control and investigate concentration gradients or inhomogeneity, as well as possible set-ups, according to your application.

Software Update: VisiSens ScientifiCal and VisiSens Plugins
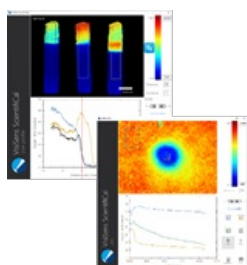
The new VisiSens ScientifiCal software contains a starter pack with several evaluation plugins ranging from

- simple live 2D pseudocolor representation with statistics,
- to live multi ROI (region of interest) evaluation with plotting,
- to live multi gradient profiling,
- as well as a video creator and a raw extractor for further processing of the data in other software.

>> HOW2 ... Use the Live Plot Plugin for VisiSens ScientifiCal (video link)
    Compare different regions of interest (e. g. inner, pheripheral and media)
>> HOW2 ... Use the Live Profile Plugin for VisiSens ScientifiCal (video link)
    Gradients over sediment interfaces, roots, etc.

Accessories to the VisiSens TD

- VisiSens TD Big Area Imaging Kit:
Enables large area imaging & includes excitation lights for O_2, pH and CO_2 imaging
- VisiSens TD MIC Kit:
Optics and an excitation light source to adapt the VisiSens TD Basic System for microscopic oxygen imaging
- VisiSens TD Mounting Rack:
Secure mounting of VisiSens TD Big Area Imaging Kit & quick-lock levers for fast modification of the set-up
- Imaging Sensor Plate Adapter Tubus:
Specifically designed for ISP24 and ISP96 imaging sensor plates due to easy attachement to VisiSens TD Basic Set

Application Examples:

Profiling Over Roots
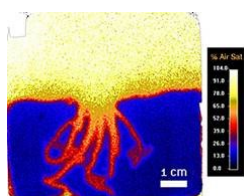
Root-mediated CO_2 uptake, O_2 release and their effects on O_2 and CO_2 dynamics in the rhizosphere of *Lobelia dortmanna* in light dark cycle experiments. Planar optodes provide insights into the spatio-temporal patterns of gas exchange between roots, sediment and microbial community.

>> Read more ...

Profiling Interfaces with One or More Analytes

Investigation of an oxygen depth gradient over a sediment-water interface with and without the use of a new aeration material.

>> Read more ...

You would like to learn even more about PreSens Precision Sensing? Please visit our homepage www.presens.de and don't hesitate to contact us. Any feedback will be appreciated.

With kind regards

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Communications

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