

# Oroboros Installation and startup support session

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Version 01: 2021-06-14 NextGen-O2k DatLab 7 ©2020 Oroboros

Updates: <https://www.orooboros.at/index.php/installation-and-startup-support-session/>



## Installation and startup support session



The **Installation and startup support session** is a remote support session with an Oroboros expert. This online support session will focus on:

1. OroboPOS service, O2k instrumental setup and DatLab 7.4 overview
2. O<sub>2</sub> calibration and instrumental background
3. Discussion with an Oroboros expert

Via a live video link, Oroboros experts guide you step-by-step on **O2k instrumental setup** and service of the polarographic oxygen sensors (**OroboPOS**) for instrumental quality control system, an essential component of HRR. During your session there will be time for discussion with our expert.

The goal of this training session is to install and set up your O2k so that it is ready for you to begin using. As we do not cover protocol design, you will find the [Blue Book](#) (5<sup>th</sup> edition) and the MitoEAGLE Bioenergetics Communication [Mitochondrial physiology](#) provide a basic introduction to

mitochondrial physiology. These along with a wide range of standardized substrate-uncoupler-inhibitor-titration (**SUIT**) protocols, which can be further customized for application to your biological samples, will help address your specific research questions.

### *The Installation and startup support session is composed of:*



**O2k-Manual:** Repository of online manuals (unlimited access) which guide beginners and experienced users from the instrumental set-up to data analysis.



The **O2k-Videosupport** provides valuable assistance, complementary to the O2k-Manual. These video clips are Open Access.



**DatLab 7.4 software** for data acquisition and analysis, specifically developed for high-resolution respirometry with the O2k-FluoRespirometer. Instrumental and substrate-uncoupler-inhibitor titration (SUIT) **DL-Protocols** which are included in DatLab 7.4 provide a guide through the sequence of steps for instrumental and biological experiments.



Individual face-to-face **virtual coaching** sessions (this takes place on the dates to be confirmed). The virtual coaching includes tutoring, guidance, questions and discussions. **8 hours** of virtual coaching are included in the Installation and startup support.

### **Materials for self-study**

» [https://wiki.oroboros.at/index.php/Installation\\_and\\_startup\\_support\\_session\\_self-study\\_material](https://wiki.oroboros.at/index.php/Installation_and_startup_support_session_self-study_material)

It is recommended that participants prepare for their first live sessions by going through the self-study material. The content will lead participants through the set-up of the instrument and introduce the field of HRR.

The date of the live sessions will be communicated to the participants once a [registration form](#) is received.

DatLab 7.4 has to be installed on the computer to which the O2k is connected ([O2k-Videosupport: DatLab 7 installation](#)).

## Program

Session	Duration
<b>Part 1.1: OroboPOS service and O2k instrumental setup</b>	
<b>Hands-on: OroboPOS service</b> <ol style="list-style-type: none"> <li>OroboPOS</li> <li>Cathode cleaning</li> <li>Anode cleaning</li> <li>Membrane mounting</li> </ol>	Start-up 2 h 
<b>Hands-on: O2k instrumental setup</b> <ol style="list-style-type: none"> <li>O2k FluoRespirometer</li> <li>Insert OroboPOS</li> <li>Insert O2k Chamber</li> <li>Chamber volume calibration</li> </ol>	Start-up 2 h 
<b>Part 1.2: DatLab</b>	
<b>DatLab overview</b>	Start-up 1 h 
<b>Part 2: O<sub>2</sub> calibration and instrumental background</b>	
<b>Hands-on: Quality control 1: Oxygen calibration</b> <p>DL-Protocol: O2k-cleaning BeforeUse</p> <p>DL-Protocol: O<sub>2</sub> calibration air</p>	Do-it-yourself 1.5 h 
<b>Hands-on: Quality control 2: Oxygen background</b> <p>Select one DL-Protocol according to your needs:</p> <p>Instrumental O<sub>2</sub> background TiP2k</p> <p>Instrumental O<sub>2</sub> background manual injections</p> <p>Instrumental high O<sub>2</sub> background TiP2k</p> <p>Instrumental high O<sub>2</sub> background manual injections</p>	Do-it-yourself 2 h 
<b>DatLab 7.4 analysis and discussion</b>	1 h 
<b>Part 3: Discussion with an Oroboros expert</b>	
To address any outstanding questions, or cover a topic of your choice	2 h 

## Tutors

<a href="#">Cardoso Luiza</a>	Mitochondrial Wizard, PostDoc, Oroboros Instruments
<a href="#">Cecatto Cristiane</a>	Mitochondrial Phoenix, PostDoc, Oroboros Instruments
<a href="#">Di Marcello Marco</a>	Research Magician, Oroboros Instruments
<a href="#">Doerrier Carolina</a>	Scientific Motive Force, CSO, Oroboros Instruments
<a href="#">Garcia-Souza Luiz Felipe</a>	Mitochondrial Adventurer, PhD student, Oroboros Instruments
<a href="#">Gnaiger Erich</a>	Innovation Alchemist, CEO, Oroboros Instruments
<a href="#">Komlodi Timea</a>	Mitochondrial Explorer, PostDoc, Oroboros Instruments
<a href="#">Schmitt Sabine</a>	Bioenergetics Detective, PostDoc, Oroboros Instruments

## Additional resources for self-study:



**O2k-Procedures** (unlimited access) explain various applications of the O2k (i.e. mitochondrial pathways, O2k-Demo experiments, O2k-Analysis, chemicals and media, O2k-mitochondrial preparations and mitochondrial and marker-enzymes).



**Substrate-uncoupler-inhibitor titration (SUIT) protocols** are applied to living cells and mitochondrial preparations. Oroboros [library of SUIT protocols](#) and the [SUITbrowser](#) offer help to find the best SUIT protocol for your research questions. The library of SUIT protocols and the SUITbrowser are available online with unlimited access.



**MitoPedia** includes a continuous development of a consistent nomenclature, terms, abbreviations and concepts in mitochondrial physiology and nonequilibrium thermodynamics, in the spirit of Gentle Science.



**Bioenergetics Communications** is the Open Access journal for publishing scientific and technical advances in bioenergetics and mitochondrial physiology as Living Communications.



**O2k-Publications** include relevant information of high-resolution respirometry.



**Mitochondrial physiology. Gnaiger Erich et al – MitoEAGLE Task Group (2020) Mitochondrial physiology. Bioenerg Commun 2020.1. doi:10.26124/bec:2020-0001.v1.**  
[Mitochondrial physiology](#)

### *Bioenergetics Communications*



The Open Access journal for publishing scientific and technical advances in bioenergetics and mitochondrial physiology as [Living Communications](https://www.bioenergetics-communications.org)

» <https://www.bioenergetics-communications.org>

### *MitoFit Preprints*



The Open Access preprint server for mitochondrial physiology and bioenergetics

» [https://www.mitofit.org/index.php/MitoFit Preprints](https://www.mitofit.org/index.php/MitoFit%20Preprints)

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## NextGen O2k

Oroboros - as a driving force in mitochondrial physiology - extends the analytical and diagnostic power of high-resolution respirometry by integration of NADH- and Q-redox monitoring in the **NextGen-O2k**. We aim at establishing the Oroboros quality control management for dissemination to our worldwide O2k-Network laboratories. This will become an effective contribution to address the acute *reproducibility crisis* of scientific investigation. In the spirit of Open Science and global networking, we will enable data sharing across projects and institutions in an Open Access database on mitochondrial physiology and pathology, to resolve the *inflation crisis* and ultimately the *value-impact crisis* of present academic publication. This will support key developments in mitochondrial medicine. In addition, we expand our business to algal biotechnology and ecology with the photobiology module of the NextGen-O2k, widening our focus from medicine to environment and climate.



## Contact

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