

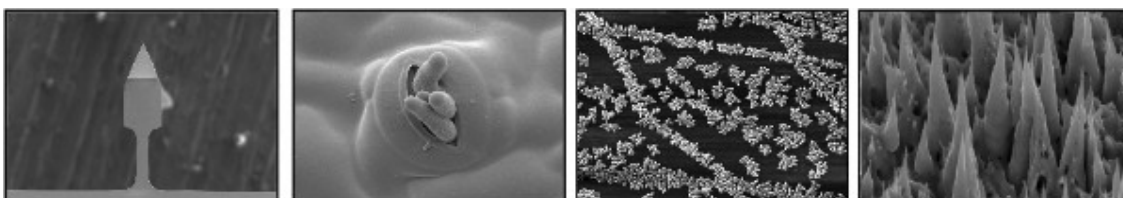
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NANO IMAGING LAB

Newsletter

VOLUME I, January 8, 2018



The NI Lab is research partner of Vitifutur



[Vitifutur](#) is an interregional project of the three countries France, Germany and Switzerland in the Oberrhein-Region. Globalisation and the change of climate brings new viral and fungal infections to our traditional vineyards. As well the wood fungus Esca and the small fruit fly *Drosophila suzuki* pose a big threat to the health of the grapes.



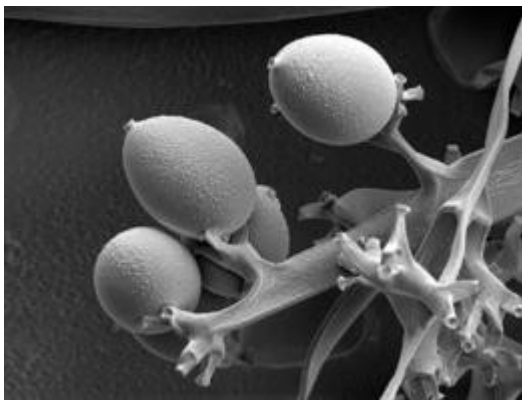
This is why Vitifutur was brought into life in February 2017, supported by the political authority of Northwestern Switzerland (BL, BS, AG and the state of CH). The project supports on the one hand the research to fight the infections and to introduce a grape variety that is more resistant to such infections. Additionally the use of sustainable agents as control measures. And on the other hand the project helps to transfer the achieved knowledge and newest technology to the wine makers.

We want the wine industry to be increasingly involved in research and innovation strategies and immediately profit from it.

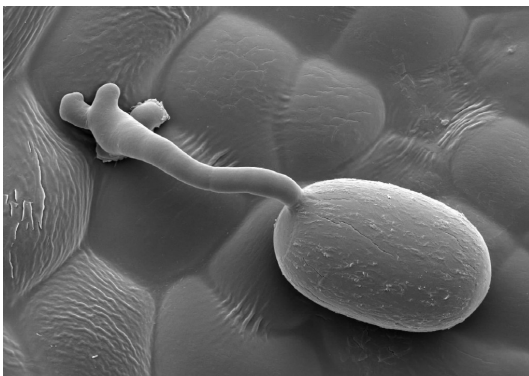
This is how Vitifutur wants to protect and guarantee the future of wine production in our region.

The project will last for three years . Swiss partners of Vitifutur are Bioreba (diagnostics) and the Nano Imaging Lab of the SNI (University of Basel).

Daniel Mathys from the NI Lab designed the Vitifutur logo.



Since more than 20 years the Nano Imaging Lab is involved in research projects of the Staatliches Weinbau Institute Freiburg, investigating grape diseases like downy and powdery mildew, parasites like the vine fretter and other plant pests.



Cryo-SEM pictures of downy mildew and vine fretter by Evi Bieler

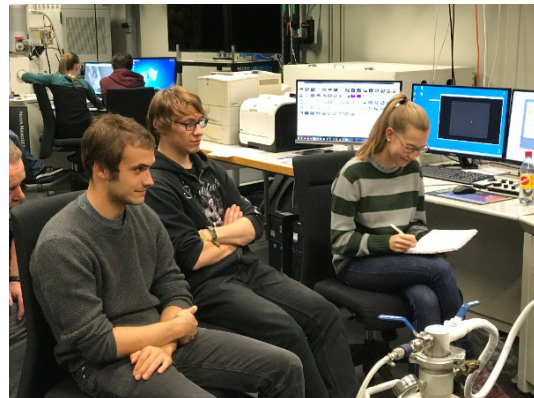
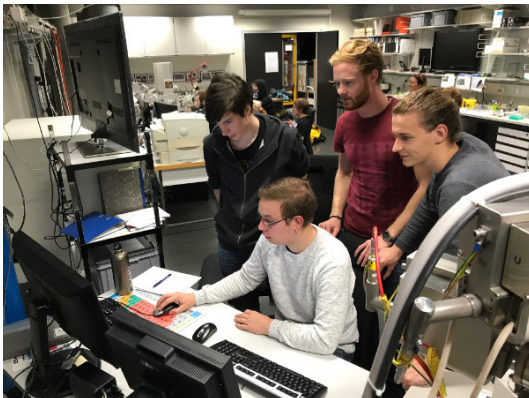
Block Course: Microscopy

Once or twice a year the Nano Imaging Lab is populated by Nanoscience students, who wish to get insights into the nano world by electron microscopy.

This year from Oct. 30th until Nov. 17th, 9 curious students participated in the three weeks of training of Scanning Electron Microscopy (SEM). In small groups they learned how to prepare the samples for SEM, using the critical point drying- (CPD), cryo- and sputter coating method.

They were trained to operate a SEM by themselves and practiced to take good quality pictures at high resolution. The objects of illustration were plant pests like powdery mildew and leaf rust on wheat, spider mites on bean plants as well as the intriguing formations of diatome earth. Furthermore the nanostructures that cause the hydrophobic lotus effect of various plants were depicted and compared to waterrepellent facade paint, that imitate those effects.

Additionally the students learned how to perform Energy Disperse X-ray (EDX)- analysis of a polished mineral in order to determine its atomic composition. Half-day demos provided insights into Transmission Electron Microscopy (TEM), Laser Scanning Microscopy (LSM) and Focussed Ion Beam (FIB) technology.

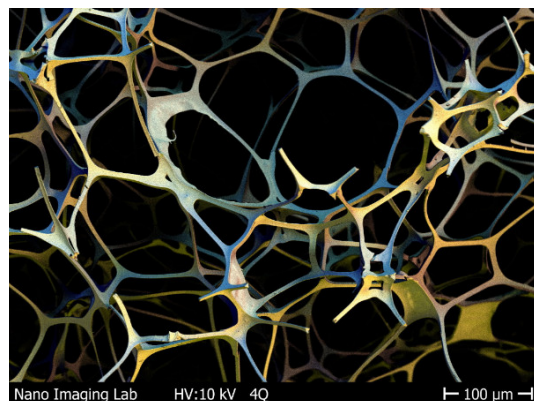


Nanoscience students during the Blockcourse November 2017

During the course the students took many beautiful pictures and some even sent them in for this years Nano Image award of the SNI, showing the beauty of the nanoworld.

The image ('The beauty of foam') taken by Corinne Mattle from our block course was chosen as one of the three best photos.

Congratulations !!



Upcoming courses in 2018 : 07.05.2018 until 25.05.2018 in the afternoons and a second course will be held in November 2018.

SEM Course for structural biologists

There are also one-day introductions into SEM as a section of the Block Course-Structural Biology and Biophysics (Microscopy). Here students get to know the preparation methods for SEM: Critical Point Drying (CPD) and Sputtering, as well as Energy Dispersive X-ray (EDX)- Analysis.

Structural differences between confluent and sub-confluent cell layers and the impact of a mitosis inhibiting chemical will be observed.

Next courses will be held at the beginning of the winter semester 2018.

Nano-Tech Event of the SNI

The Swiss Nanoscience Institute organizes a **Nano-Tech Event in Brugg (AG)** on Thursday, **February 15th 2018**. To this event you are cordially invited. The event serves to present current research projects and to network with companies dealing with nanotechnology.

There will be short lectures and a poster session, as well as the opportunity to talk with company representatives and academics. The lectures will be held in German.

The [programm](#) starts at 16:00 and ends at 18:30. Finally, there will be the opportunity for an informal exchange with a sociable apéro riche.

[Registration](#) until January 26th, 2018 with Michèle Wegmann
(Michele.Wegmann@unibas.ch)



Nano-Tech Event

Informations- und Networking Event
mit Nano-Argovia Partnern

Einladung zur Informationsveranstaltung

Donnerstag 15. Februar 2018

16.00–18.30 Uhr mit
anschliessendem Apéro

BRUGG Flex Gebäude
Industriestrasse 19
5210 Windisch

Saal Vindonissa (beim Eingang ENSI)



Our [pricelist for 2018](#)

Nano Imaging Lab User Fees			SNI Network (Uni Basel, PSI, FHNW, ETH, CSEM)	Non-SNI Network Non-commercial	Commercial (for Profit)
		Price per	CHF	CHF	CHF (excl. MWST 8%)
Preparation	Sample Prep., CPD, Mounting, Sputtering,...	hour	10	100	250
		day	80	500	1500
Instrument operated by instructed User	SEM (incl. EDX)	hour	15	100	200
		day	120	500	1200
	Dual Beam FIB (Gallium included)	hour	40	150	---
		day	240	800	---
	TEM	hour	15	100	200
		day	120	500	1200
	AFM (Cantilever Included)	hour	10	20	100
		day	80	100	500
Confocal (LSM)	hour	free	free	50	
	day	free	free	150	
Full Service	SEM (incl. EDX)	hour	30	100	250
		day	240	500	1500
	CRYO SEM (In2 included)	half day	150	350	950
		day	320	600	1700
	Dual Beam FIB (Gallium included)	hour	50	150	300
		day	300	1000	2000
	TEM	hour	30	100	250
		day	240	500	1500
AFM (Cantilever Included)	hour	20	100	250	
	day	180	500	1500	
Confocal (LSM)	hour	10	50	150	
	day	80	250	1000	
Overnight Programs	Autom. Particle analysis	Up to 12hrs	50	150	300
	EDX Mapping	Up to 12hrs	50	150	300

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