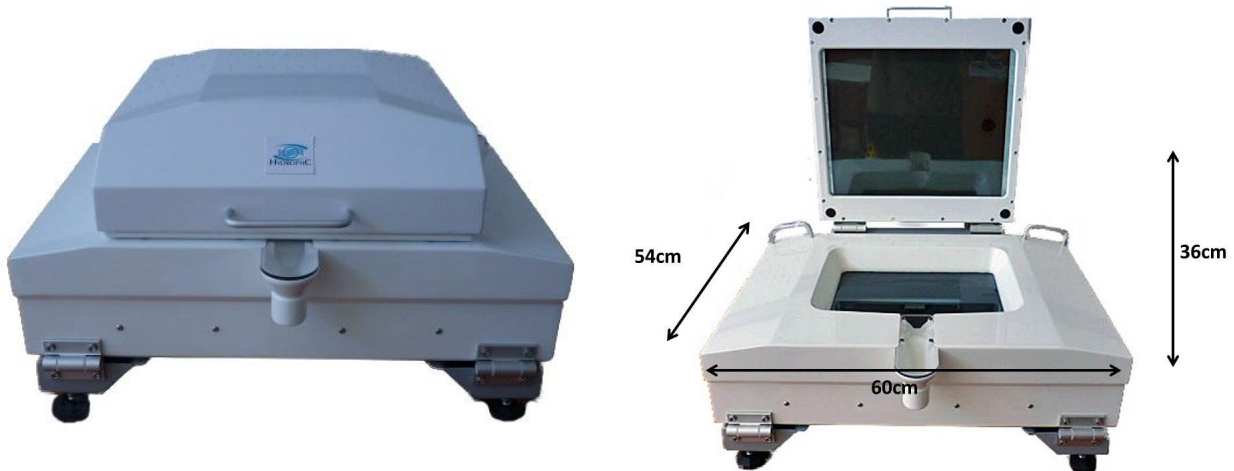




法国 HYDROPTIC 公司 ZooSCAN 浮游动物图像扫描分析系统



ZooSCAN 浮游动物图像扫描分析系统主要用于对浮游生物样品进行快速安全清洗、扫描成像、种类鉴定、数量统计、大小测量、生物量测定等工作。

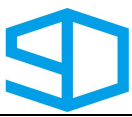
ZooSCAN 系统是由浮游生物甲醛快速清洗装置、ZooSCAN、ZooProcess 和 EcoTaxa 网站等共同组成的。甲醛快速清洗装置专门用来清洗使用福尔马林保存的浮游生物样品中的甲醛成分；ZooSCAN 是硬件部分，主要进行浮游动物样品扫描，形成数字图像；ZooProcess 和 EcoTaxa 是软件部分，分别以标准化的程序处理原始图像、对不同个体的形态参数进行自动测量和对图像中的浮游动物进行自动分类和计数。



甲醛快速清洗装置采用 AISI 316 不锈钢制成，配 6 个相互独立的圆柱形清洗器，每个清洗器容积约 2L，可单独拆卸。每个清洗器配有 1 个独立开关，可单独控制水流入出。

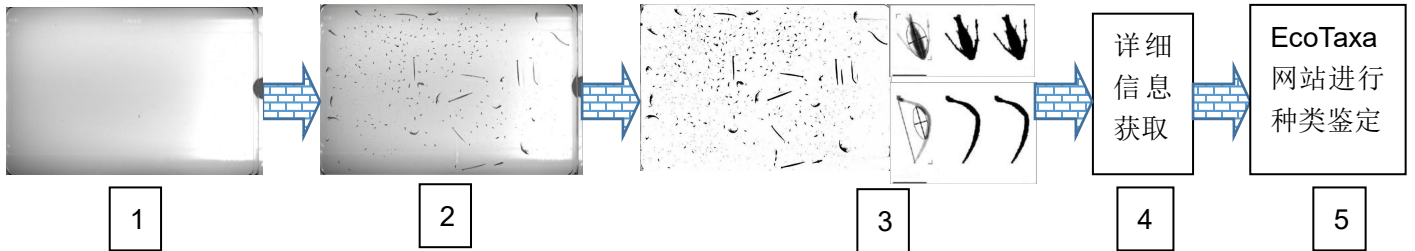
每个清洗器侧面有一个矩形小孔，装有 500 μm （可定制，最小 20 μm ）孔径的不锈钢网筛。每个清洗器有 1 个手柄，保证使用时的方便和安全。

顶部是 1 个焊接上的圆环，直径 180mm，圆环上安装了一个网目 500 μm 的不锈钢筛网。底部直径 10mm，有 3 个直径 3mm 的圆孔，圆孔上装有网目 500 μm 的不锈钢筛网。清洗器通过 1 个阀门连接在 2mm 的 AISI 316 不锈钢架上。一个进水接头，一个出水接头。



ZooSCAN 工作流程

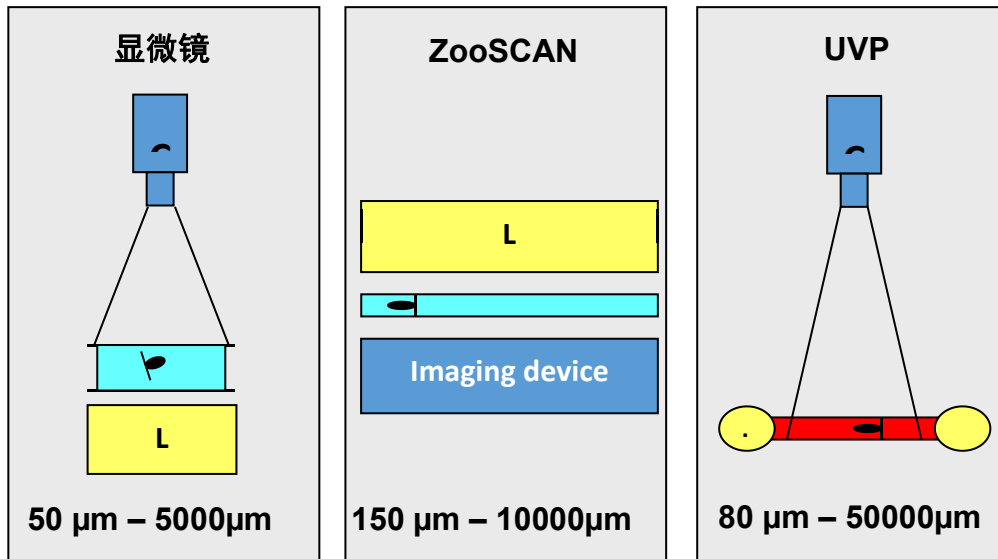
1)扫描空白背景；2)扫描清洗过甲醛的样品，获得浮游动物原始图片和元数据信息；3)使用 ZooProcess 软件，标准化原始图片，提取并测量图片中不同个体的形态参数；4) 通过对形态学参数的提取与分析，可进一步获得样品的粒径组成、生物学体积等信息；5)通过 EcoTaxa 网站已建立的图像培训数据库，针对已扫描的样品图像进行浮游动物的自动识别，获得不同类群浮游动物的数量。



ZooSCAN 应用领域

生态学调查、渔业、水产养殖、教育。

ZooSCAN 原理

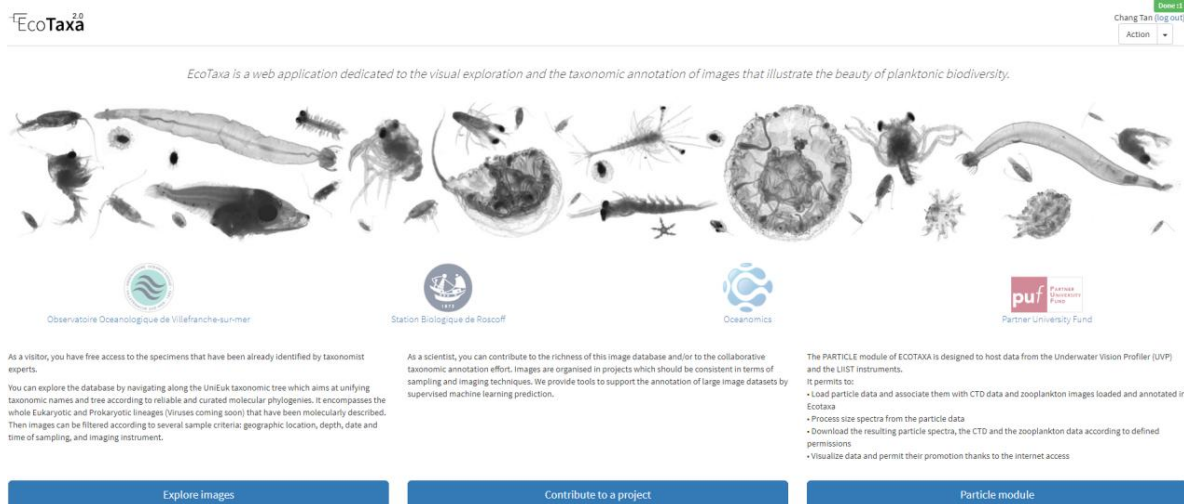




		
<p>Microscope 实验室</p>	<p>ZooSCAN 实验室+野外(现场)</p>	<p>UVP 野外(水下原位)</p>

ZooSCAN (CNRS 专利) 系统使用扫描仪技术, 这项技术带有传统照明设备和一个用于放置浮游动物样品的扫描室。ZooSCAN 可以记录高分辨率的数字化图像, 然后这些数字化的图像可以通过电脑程序进行研究。虽然这个数字化的浮游动物图像比使用一个双目显微镜获得的图片的分辨率要低, 但这项技术已被证实, 在有大型样品种类时使用是再适合不过了。通过与 EcoTaxa 网站上已有的浮游动物数据库进行对照, 可以自动的识别、鉴定样品中浮游动物的种类。

浮游动物识别、鉴定网站——EcoTaxa



EcoTaxa User: Chang Tan (log out) | Action

EcoTaxa is a web application dedicated to the visual exploration and the taxonomic annotation of images that illustrate the beauty of planktonic biodiversity.

Observatoire Océanologique de Villefranche-sur-mer | Station Biologique de Roscoff | Oceanomics | Partner University Fund

As a visitor, you have free access to the specimens that have been already identified by taxonomist experts. You can explore the database by navigating along the UniEuk taxonomic tree which aims at unifying taxonomic names and tree according to reliable and curated molecular phylogenies. It encompasses the whole Eukaryotic and Prokaryotic lineages (Viruses coming soon) that have been molecularly described. Then images can be filtered according to several sample criteria: geographic location, depth, date and time of sampling, and imaging instrument.

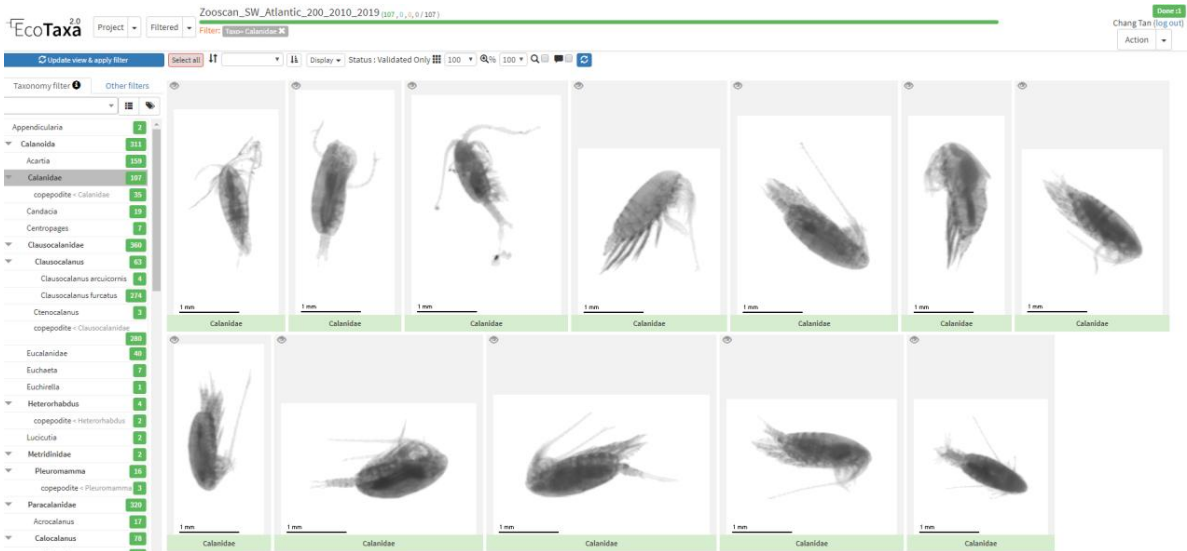
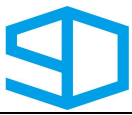
As a scientist, you can contribute to the richness of this image database and/or to the collaborative taxonomic annotation effort. Images are organised in projects which should be consistent in terms of sampling and imaging techniques. We provide tools to support the annotation of large image datasets by supervised machine learning prediction.

The PARTICLE module of ECOTAXA is designed to host data from the Underwater Vision Profiler (UVP) and the LISST instruments. It permits to:

- Load particle data and associate them with CTD data and zooplankton images loaded and annotated in EcoTaxa
- Process size spectra from the particle data
- Download the resulting particle spectra, the CTD and the zooplankton data according to defined permissions
- Visualize data and permit their promotion thanks to the internet access

[Explore images](#) | [Contribute to a project](#) | [Particle module](#)

EcoTaxa 网站主界面



EcoTaxa 浮游动物分类界面

为什么使用 ZooSCAN?

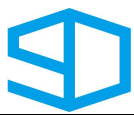
- 传统分析方法（镜检）
 - 需要专业人员
 - 操作过程相当繁琐
 - 后期数据处理工作量极大
- ZooSCAN（超高质量图像扫描）
 - 无需专业人员
 - 操作过程非常简单
 - 后期数据由软件自动处理

ZooSCAN 规格:

- 型号: ZSCA04
- 规格 (LxWxH): 60 x 54 x 36 cm (关上盖子)
- 质量: 25 Kg
- 输入电压: 110 to 230 VAC, 50 to 60 Hz
- 接口: USB 2.0

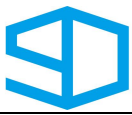
ZooSCAN 特性:

- 应用(专): 专门用于浮游动物研究
- 功能(强): 自动鉴定、分类、计数、计算生物量
- 效率(高): 快速批量分析大量浮游动物样品
- 信息量(大): 经纬度、采样深度、网型、网口面积等
- 照明系统(优): 确保图像质量和对比度较优



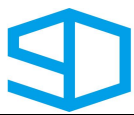
- 图像解析度(高): 高可达 4800dpi
- 图像分辨率(高): 14150 x 22640 (3.2 亿像素,1GB)

	
ZooSCAN 正在进行扫描	回收 ZooSCAN 样品池中的样品
	
浮游动物样品池，透明度佳	ZooSCAN 主机+ZooProcess 软件



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