

Rosette sampler

Profession: Collect water samples and oceanographic data at different depths

 Chemistry / Biology / Physics



INSU – Plouzané (FR)



Underwater



100-150 K €

Professional overview

1. **Deployment of the rosette** with 17 **Niskin bottles** of 8L each. The Niskin bottle are immersed open.
2. **Real time downward vertical profiles** of the CTD sensors (**Conductivity, temperature and depth**), **fluorescence** and **turbidity** sensors attached on the metal frame.
3. **During the ascent of the rosette** the Niskin bottles are **remotely closed** thanks to an **electro-carrier cable** at the selected depths (chosen according to the data recorded by sensors during the downward profile).
4. **Once the rosette is back on the deck**, scientists can collect the water samples from the Niskin bottles.



The Rosette © Eugénie Dufour

Education

- **XX century** : utilization of Nansen bottle for sampling water at a specific depth
- **1966** : Invention of the Niskin bottle by **Shale Niskin** usually deployed by attaching an array of individual bottles to a hydrowire
- **Since 1975** : the CTD-Rosette system became common in oceanography

Skills highlights

- **Real time *in situ* chemical, biological and physical measurements**
- **Sampling water masses at different depths** defined in real time, from the bottom to the surface
- Deployment of further instrument on it : **Underwater Video Profiler, Acoustic Zooplankton Fish Profiler, Concerto** (high resolution measurements of vertical velocities)

Interests & curiosities

Relatively simple to use

Only device to collect high depth water sample (up to 10000m depth)

Multiple sensors can be attached to it

A metal-free model can be used for sampling trace metals