

# LOW-TECH AT SAILOWTECH

## RAMAN MICROSCOPE

A raman microscope can be used to **study microplastics in water** samples through observation of the **shape and size of the plastic particles** and by measuring the **raman spectrum** which is unique to each chemical compound and therefore allows its **identification**.



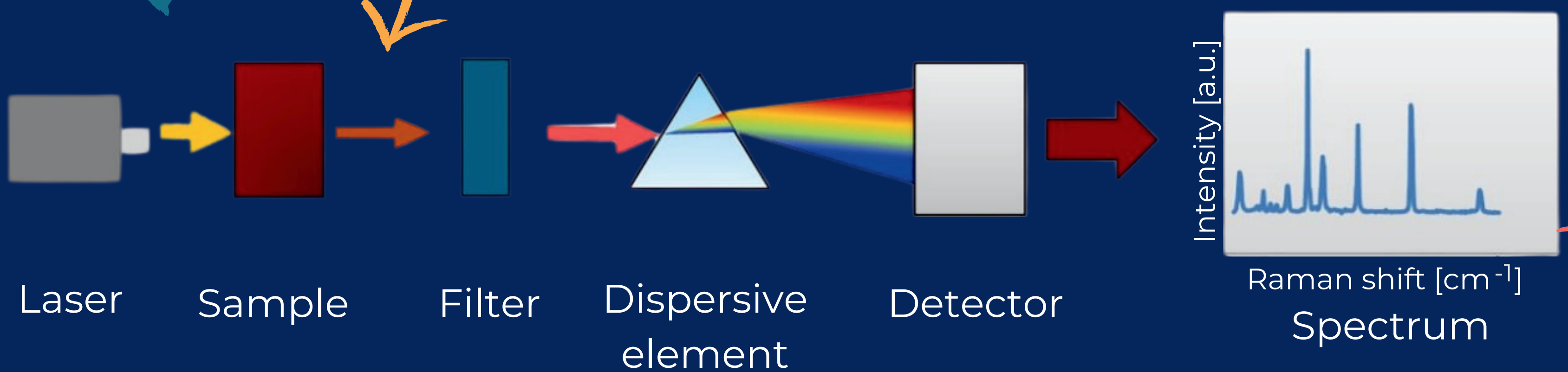
A 639nm **monochromatic laser** beam is **focused** on the sample.

Most scattered photons retain the **same energy** (Rayleigh scattering), but a small fraction undergoes an **energy shift** due to interactions with molecular vibrations (Raman scattering).

### OpenRamanDatabase

A software for **analyzing data** from a low-cost Raman spectroscopy, using **peak matching and noise thresholding** to identify microplastics.

Based on **OpenFlexure OpenSource** project.



This Raman, designed for use aboard a sailboat, **costs 10 times less than a conventional model** and can analyze samples directly in water!

### Sailowtech Database: an example with PVC

