

WELFA

wainvam

WELFA (**WAINVAM-E Lateral Flow Assay**) is a new generation of Lateral Flow immunoassays using NV (Nitrogen Vacancy) centres nanodiamonds as fluorescent probes.



Applications

Detect and quantify

markers of infection, inflammation, cancer pathogens (viruses, bacteria) allergens, toxins, etc.

Measure groups of biomarkers.

Early diagnosis assistance

to improve the quality and/or life expectancy of patients.

Advantages

Accessible

Simplified procedure and reading of results

Fast

Results in few minutes

Economical

Similar cost to other LFA
Small sample quantity required

Photostable

No bleaching, no flickering

Ultra-sensitive

Detection of very low levels of analytes

Multiplexing

Detection of multiple analytes

Quantitative

detection of target analytes

NV diamonds centres

A diamond is an assembly of carbon atoms. A NV centre is a defect voluntarily incorporated during the manufacture of diamond: a carbon atom is replaced by a nitrogen atom (N) and one of its neighbors is left vacant (V).

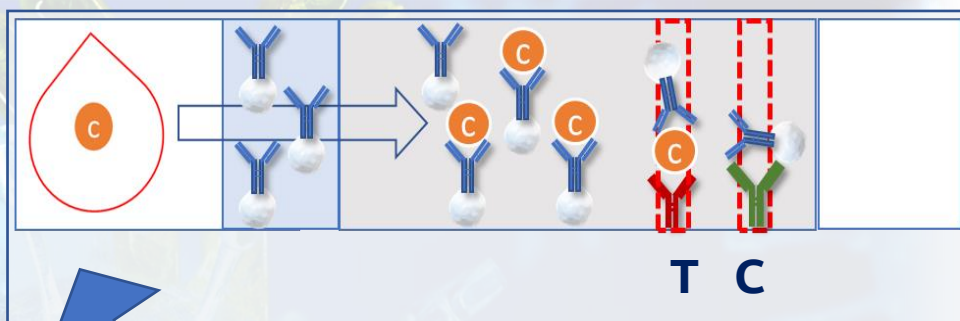
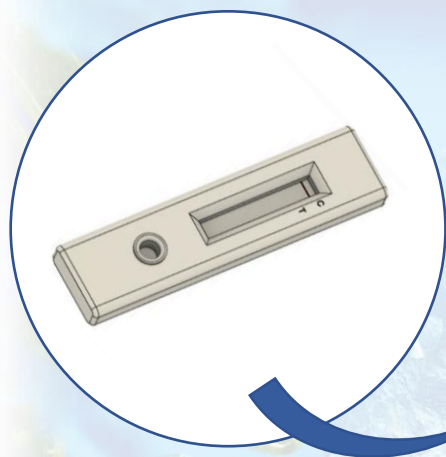





Crystal structure of a NV centre

Operation of WELFA

WELFA is based on the remarkable optical properties of nanodiamonds with NV centres. Under the action of a green laser, they become formidable markers by the emission of a red fluorescence.

They can be functionalised to detect specific analytes, which offers a wide range of possibilities and a great adaptability of the system.



-  Antibody
-  Nanodiamond
-  Target molecule
- T Test line
- C Control line

WELFA - Reader

Optical reading of the strip with noise elimination.

WELFA – Cassettes

Strips with custom functionalised nanodiamonds.

Customised offer

To customise your **tests**, we determine together your needs :

- ✓ **Analytes** to be detected and their quantification
- ✓ **Samples to analyse** (nature, formula)
- ✓ Expected **measurements and performances**

