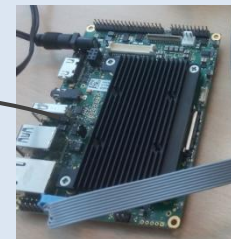
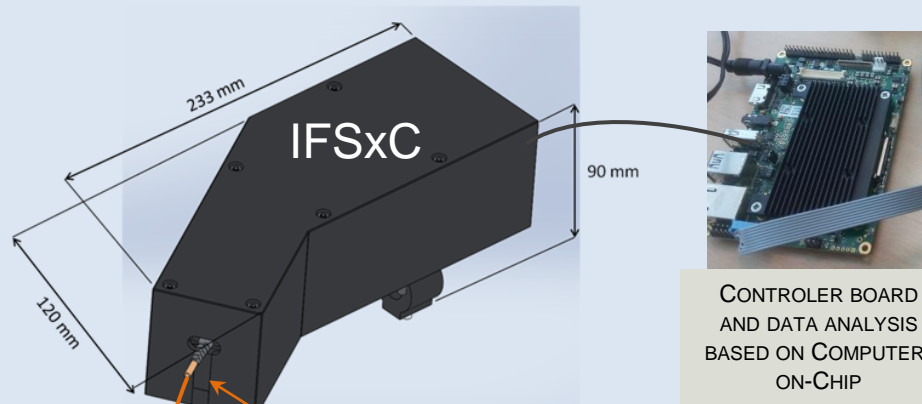




Product description



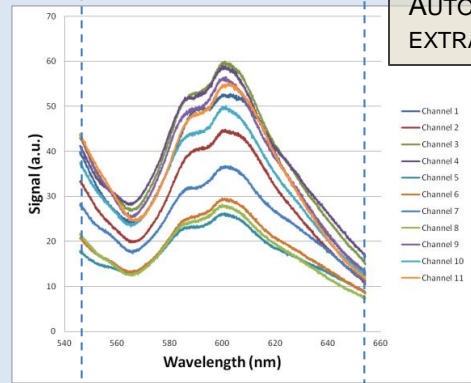
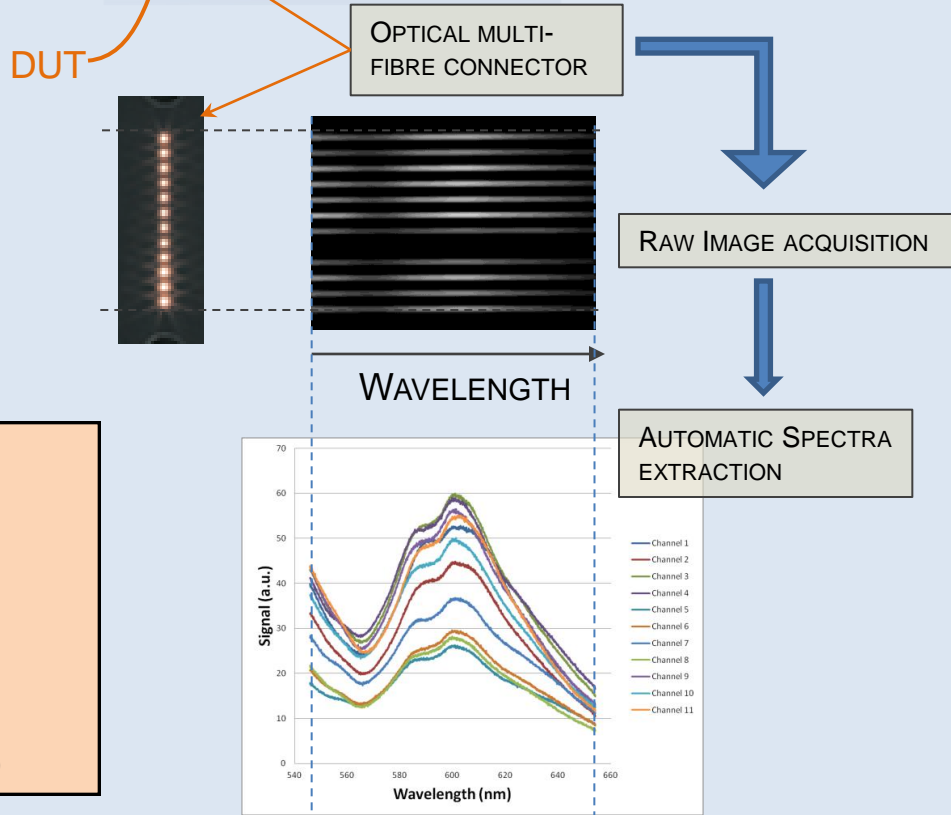
CONTROLLER BOARD AND DATA ANALYSIS BASED ON COMPUTER-ON-CHIP

SPECIFICATIONS

- Custom design in UV, visible and near infrared
- Monomode or Multimode fibre array input
- Bandwidth 50 to 100 nm / Resolution 30 – 75 pm (depending on fibre type)
- Precision on peak detection down to ~1 pm (depending on Device Under Test)
- 1-to-5 spectra per seconds
- Up to ~20 channels (depending on fiber type)
- Portable - Small form factor (233mm x 120mm x 90mm)
- Low cost
- Computer-on-Chip for image and data analysis, communication (ethernet, wifi, usb, ...) (150 mm x 100 mm)

TYPICAL APPLICATIONS

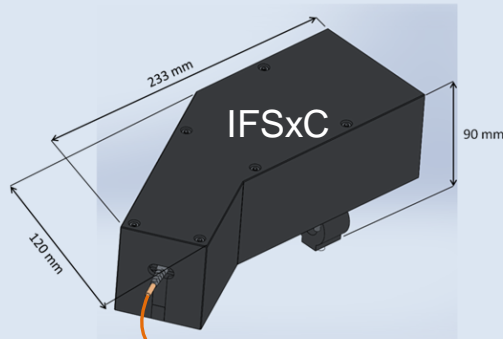
- VIS-NIR multichannel spectrometry
- Interrogation of photonic transducer array:
 - Optical ring resonator array
 - Resonant waveguide gratings array
 - Surface Plasmon Resonance (SPR) array
- Multichannel Raman
- Multichannel Laser induced breakdown spectroscopy (LIBS)



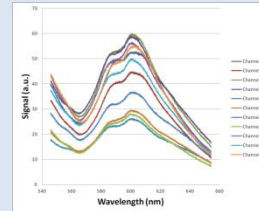


Example of applications with immunologic sensors

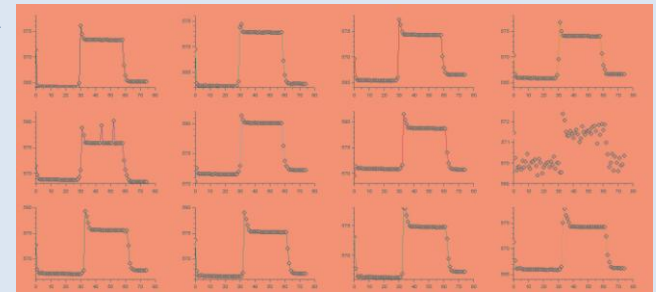
IFSxC - Integral Field Spectrometer Multi-channel parallel analysis



Fiber bundle



Sensogram



- Automatic detection of the resonant wavelength of the photonic transducers.
- Real time sensogram acquisition (resonant wavelength versus time)

OPTICAL PROBES COUPLED TO TRANSDUCING CHIPS - EXAMPLES FROM OUR PAST / RUNNING PROJECTS

BACTERIA DETECTION
(3 CHANNELS)

WBHEALTH – BIOBACTIL PROJECT

OCEAN WATER MONITORING OF
CHEMICALS (12 CHANNELS)

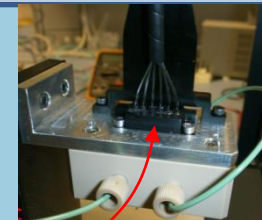
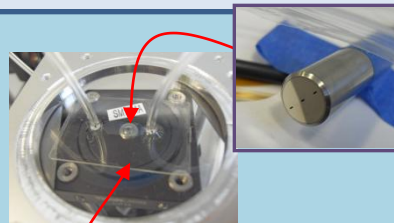
FP7-ENVI GUARD PROJECT

ANTIBODIES MONITORING IN
BIOREACTORS (8 CHANNELS)

EUROTRANSBIO-APTACHIP PROJECT

OPTICAL
PROBE

FIBRE OPTICS BUNDLE PROBE
(mounted on transducer
chip with flow cell)

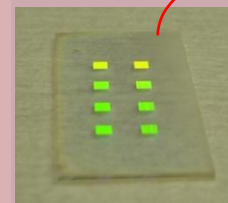


TRANSDUCERS

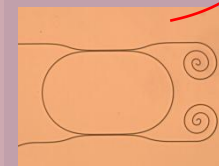
OPTICAL TRANSDUCERS
(functionalized with
biological probe for
immunologic sensing)



Resonant
Waveguide
Grating



Resonant
Nanopillars

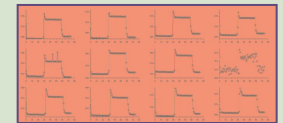
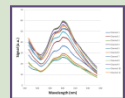
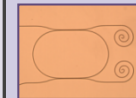
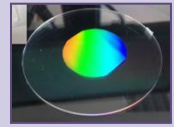
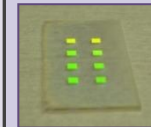
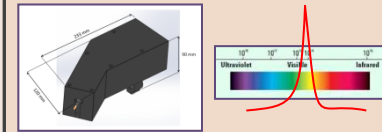


Ring
resonators



IFSxC - Integral Field Spectrometer Multi-channel parallel analysis

- Adaptation of the spectrometer based on your needs
 - Wavelength range
 - Resolution
 - Form factor
- Multi-channel optical probe development to fit your transducing chip specifications
 - Standard probes with up to 12 channels
 - Custom probes with less or more channels
- Transducing chip design and brokering with chip manufacturer
 - Large portfolio of technologies and network of manufacturers :
 - Silicon nitride ring resonators on glass or silicon substrate,
 - Metal-oxide gratings on polymer,
 - Silicon nitride nanopilars
 - Surface Plasmon Resonance,
 - ...
- Signal processing :
 - Access to raw images and spectra
 - Spectra post-processing (non-linear data fitting, ...) integrated on the computer-on-chip.
 - Custom developement
 - Open interface (Linux Open-Embedded) for easy integration with you own processing chain)
- Accompagnment for product industrialization:
 - Network of companies for product industrialisation in different market (including biomedical, IVD)
 - Electromagnetic compatibility (EMC)
 - CE certification



OEM
to
CE