

Sample processing: towards portable paper-based biosensor

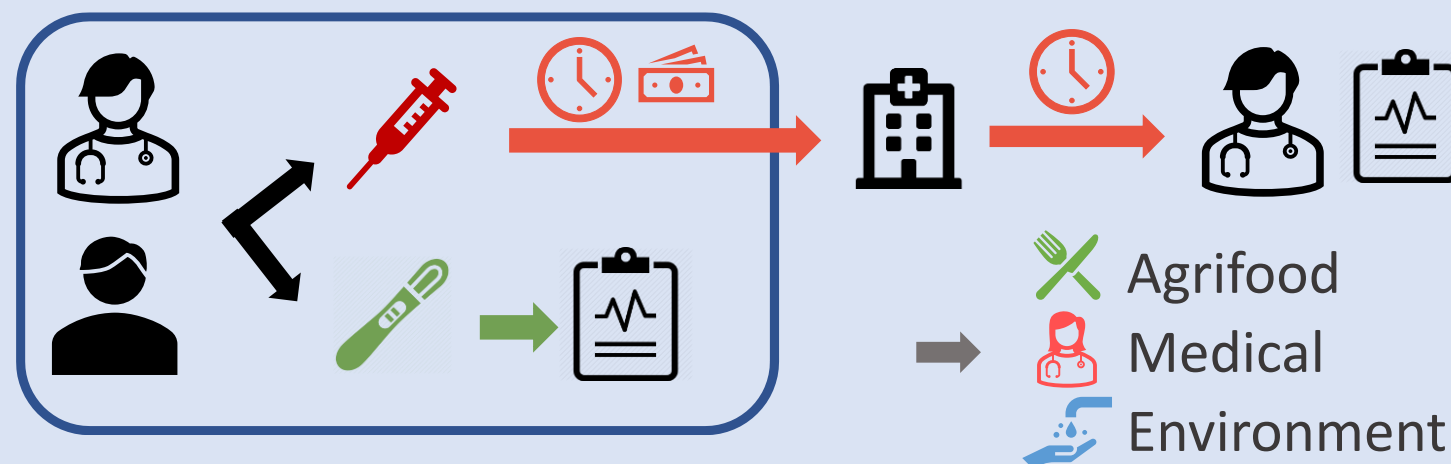
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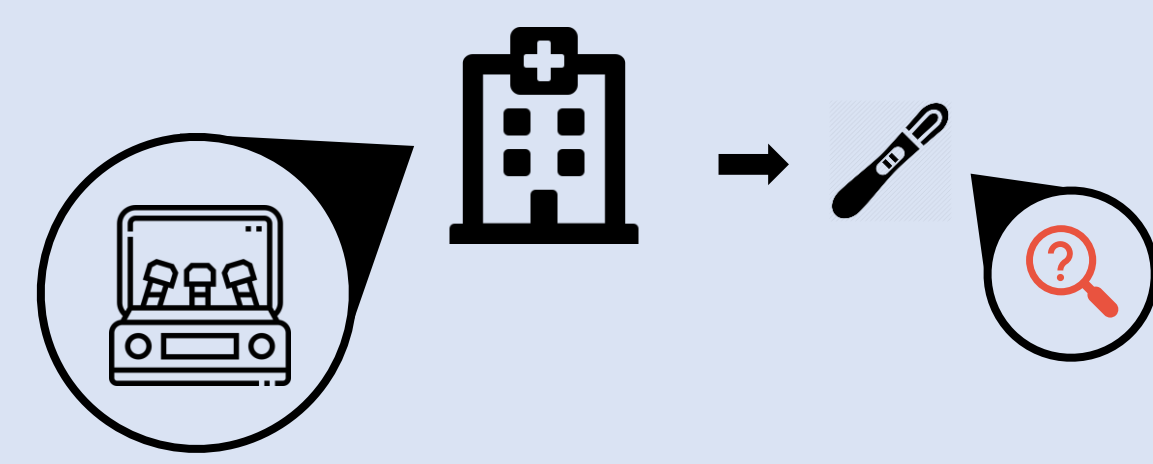
Point of care

Test directly at sampling site



Sample treatment

Portable sensor to replace bulky equipment



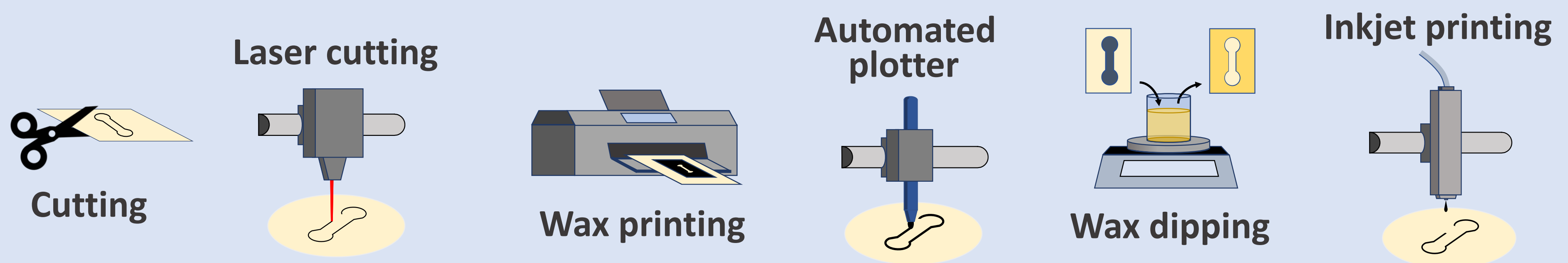
Paper-based microfluidic devices

Type of paper

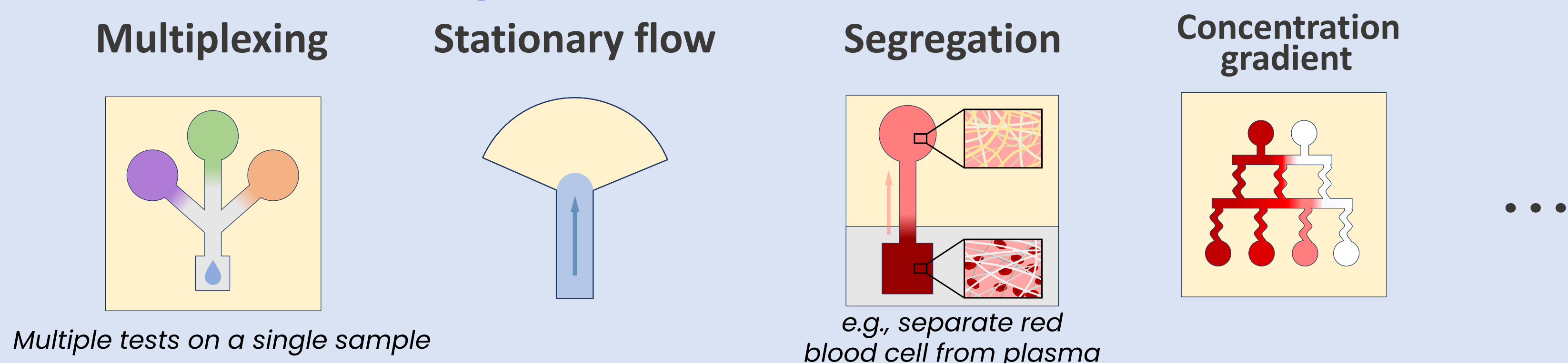
Anisotropic fibrous structure, capillarity & biocompatibility

Type	SEM image	Properties	Function	Current application
Cellulose		High porosity	Microfluidic pump, sample collector	Lateral flow assay (LFA), Glucometer, chromatography
Nitrocellulose		Attachment of biomolecules (N-functional group)	Receptors binding	LFA (test line), dipstick
Glass fiber		Chemically passive	Nanoparticle storage, segregation	LFA

Fabrication methods

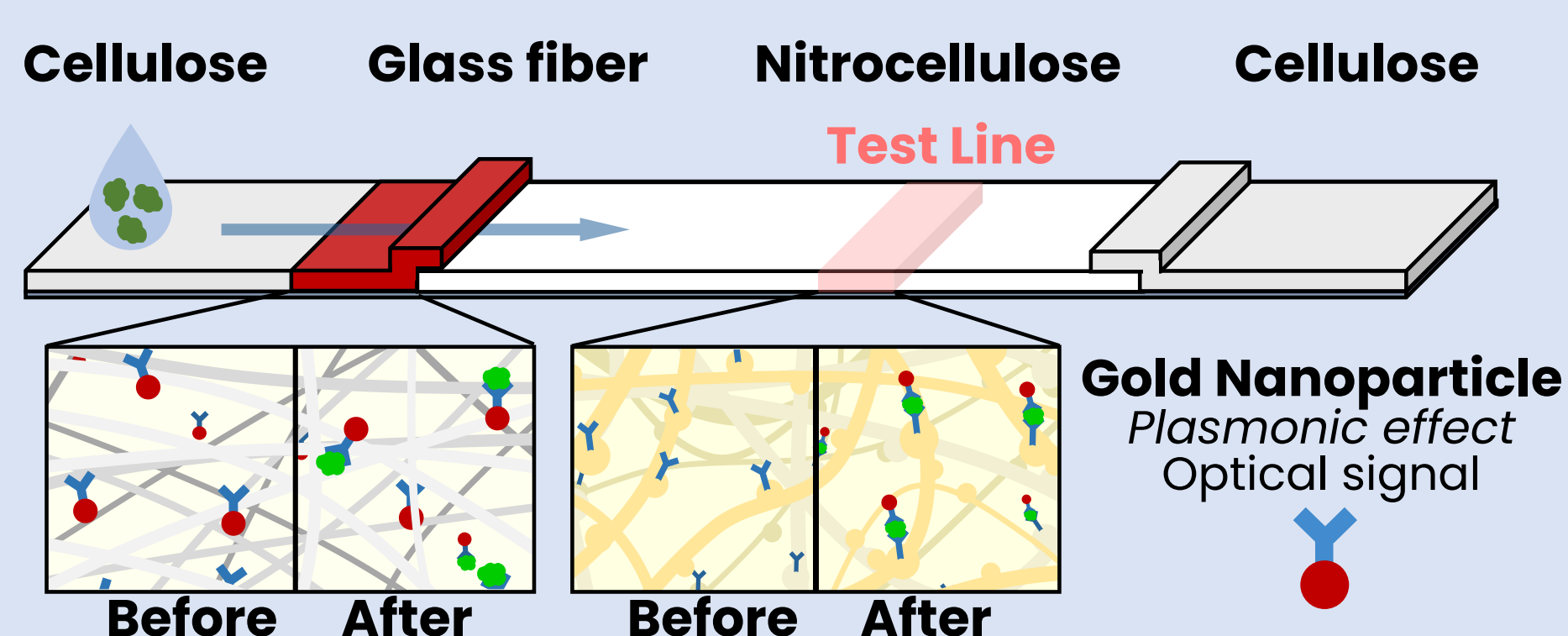


Microfluidic utility

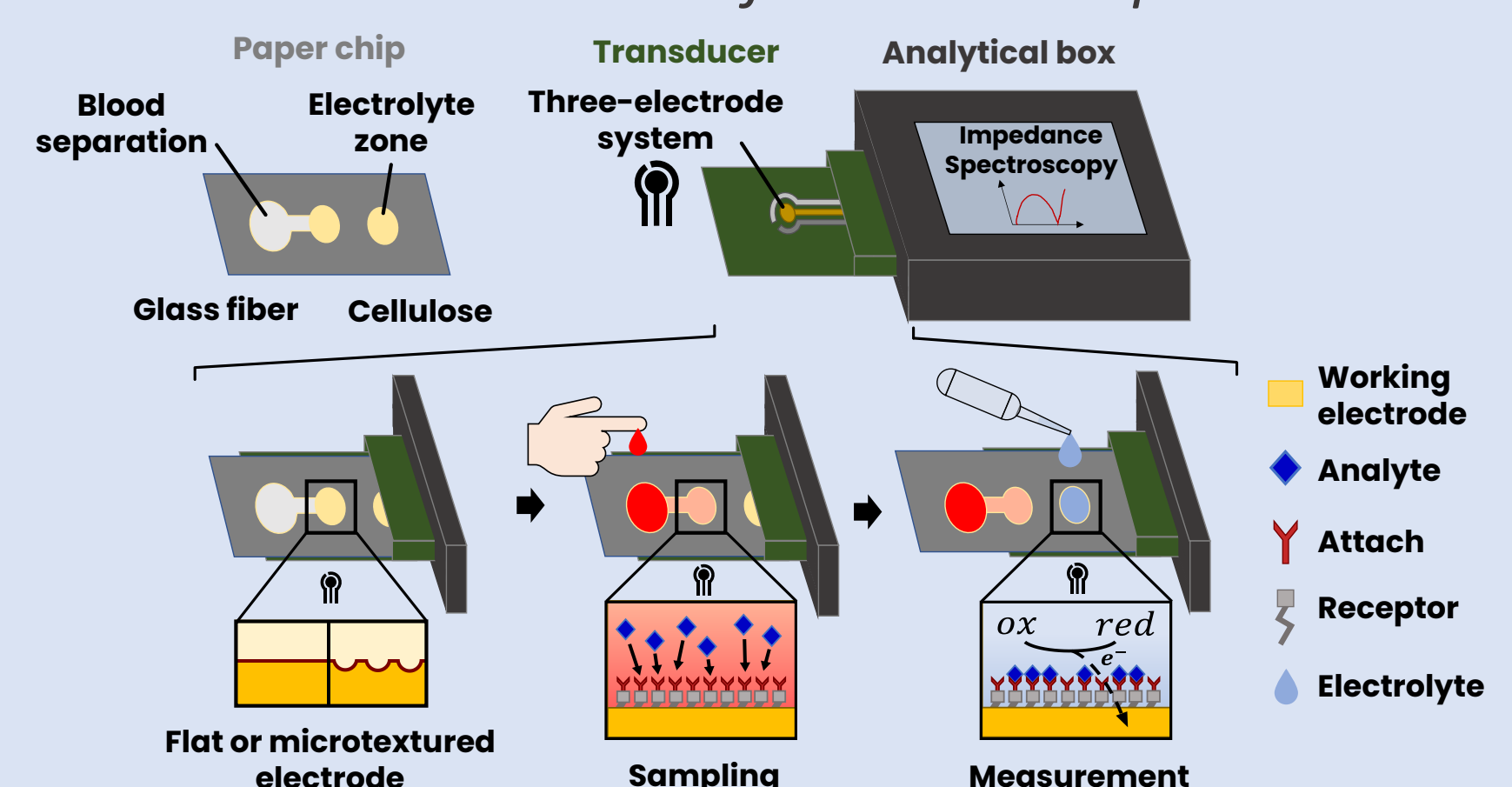


Application

Lateral flow assay (Covid self-test, pregnancy test,...)



My thesis : D-dimer biosensor for blood sample



Acknowledgements

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References

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