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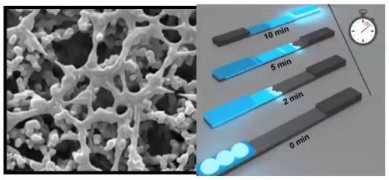


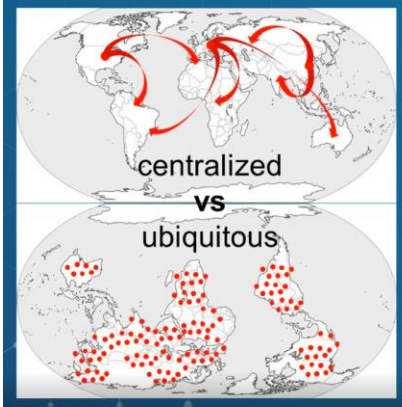
How COVID19 changed the scenario

The development of new diagnostic devices is a process characterized by several bottlenecks. Most of them related to sub-optimal interactions between the actors involved, i.e.:

- **The scientists**
- **The clinics**
- **The regulatory bodies**
- **The companies**

	TRL 1-2	TRL 3-6	TRL 6-7	TRL 8-9	
Business	▪ Analysis of techs. available in the market ▪ Definition of intended use ▪ Identification of target performance	▪ Prototype desing and development ▪ Risk assessment ▪ Software validation (if applicable)	▪ Performance evaluation: ▪ Scientific ▪ Analytical ▪ Clinical	▪ Quality management ▪ Technical dossier compilation ▪ Regulatory approval	▪ Commercialization ▪ Scale-up
	Conception and design	Laboratory testing	Clinical trials	Regulatory review	Scale-up and launch
Science	▪ State of the art analysis (literature) ▪ Focus on sensitivity improvement ▪ Innovation with respect to published works.	▪ Proof-of-concept performed with preliminary setup ▪ Fundrising (public) ▪ Anal. performance and reproducibility study.	▪ Validation with small cohort (Phase I) ▪ Validation with larger cohort (Phase II) ▪ Ease of use validation	▪ Quality management ▪ Technical dossier compilation ▪ Regulatory approval	▪ Patenting and publishing ▪ Spin-off creation or technology licensing to industry ▪ Large scale reproducibility test

Ubiquitous fabrication of nanobiosensors



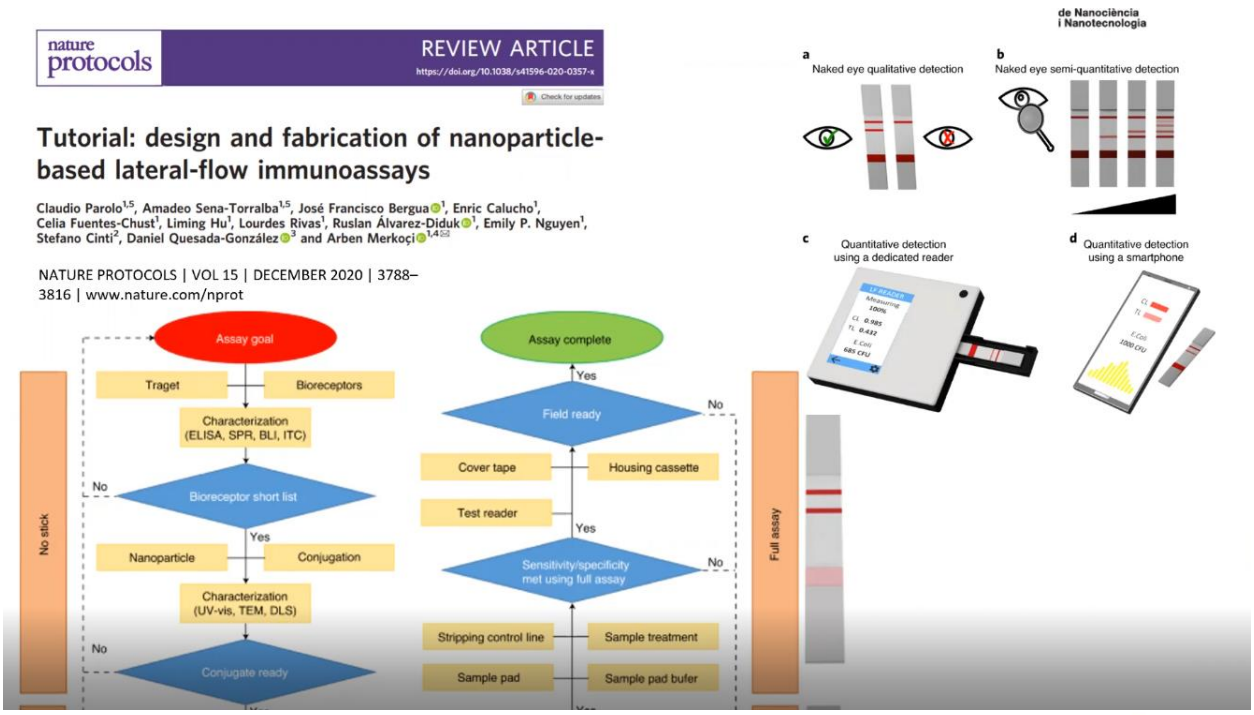
Centralized production of nanobiosensors

Ubiquitous fabrication of nanobiosensors



Printing Stamping Cutting (LF)

SMARTPHONE
Paper/Graphene-Enabling Biosensing



NP-based lateral flow immunoassay

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More antigen → More AuNPs → More color intensity