



NGM Open Call Reference Case

OVERVIEW

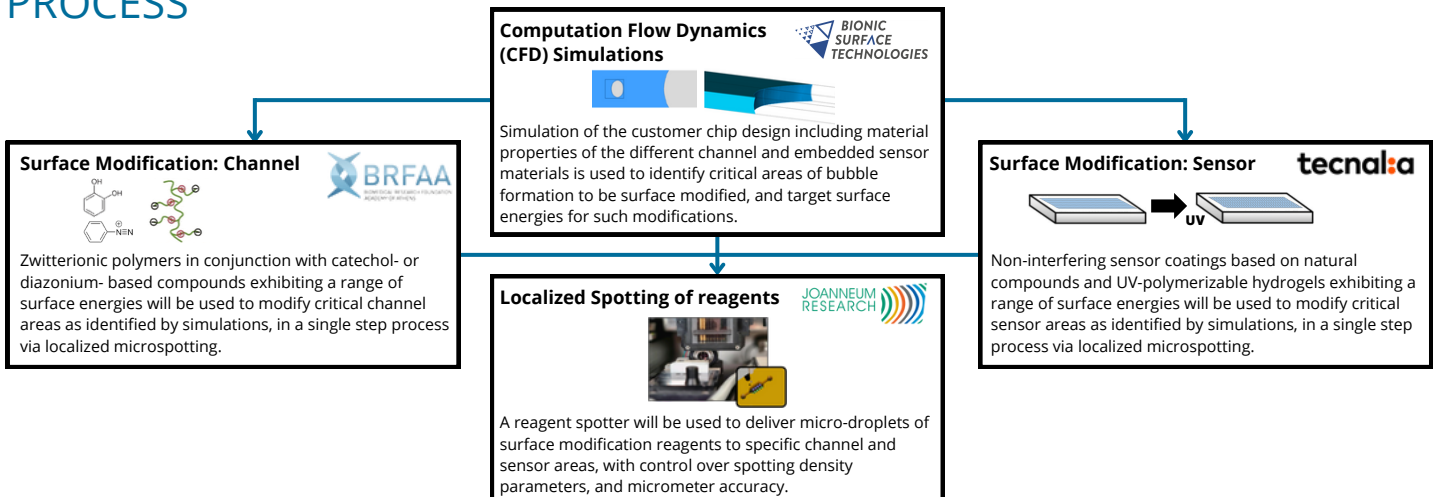
Customer challenge: Adhesion of gas bubbles to blood analyzer microfluidic device

The customer is developing a novel clinical device for blood analysis by flowing low volume blood samples through a microfluidic channel containing numerous sensors. The differences in surface energies between the materials present in the channel, in combination with the sampling and washing protocols used for blood sample measurements, give rise to the formation and adhesion of gas bubbles on the channel and sensor surfaces which interfere with measurement.

MIH Solution: Localized surface modification strategies to prevent gas bubble adhesion

NGM partners have come together with the customer to develop a strategy to ensure bubble-free flow of blood samples through the microfluidic measurement channel. Computational Fluid Dynamics (CFD) simulations are used to identify areas where gas bubbles form and adhere. The simulations will inform the development of surface modification strategies compatible with the channel and sensor surfaces, and areas within the channel and sensor surfaces to locally apply the tailored surface modification chemistries via microspotting.

PROCESS



PROJECT

Scope:

- Budget: 126,294 €
- Funding Rate: 83% (104,720 €)
- Duration: 6 months
- NGM Partners: Biomedical Research Foundation of the Academy of Athens, bionic surface technologies GmbH, Joanneum Research Forschungsgesellschaft mbH, Fundacion Tecnalía Research & Innovation

MIH Benefits:

- Technical consulting: The MIH offers access to an established network of experts along our entire value chain of microfluidics systems towards offering solutions to customers' technical challenges.
- Project co-ordination and management: The MIH offers implementation of technical solutions as identified by technical consulting, by co-ordinating and managing cohesive projects based on multiple services from our established network of partners.

Value Chain

