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Easy-to-use and battery-free detection of selected hazardous materials and chiral compounds via cholesteric polymer sensors

Project Idea	The idea behind the project is to develop easy-to-use, battery-free and low-cost flexible polymeric films that change color upon contact with specific hazardous substances or one of the enantiomers of a chiral compound, depending on their chemical composition
Organization name, town and country	Faculty of Advanced Technologies and Chemistry, Military University of Technology, Warsaw, Poland
Addressed topic(s)	HORIZON-CL4-INDUSTRY-2025-01-MATERIALS-44: Innovative Advanced Materials Innovation Procurement (CSA) HORIZON-CL4-INDUSTRY-2025-01-MATERIALS-52: Accelerate the uptake of life-cycle assessment (LCA) for Safe and Sustainable by Design (SSbD) chemicals and materials and resulting products (RIA)

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Faculty of Advanced Technologies and Chemistry
Military University of Technology

Institute of Chemistry

Institute of Applied Physics

Institute of Materials Engineering

The faculty is focused on developing innovative solutions for civilian and military applications, with strong emphasis on advanced materials, nanotechnology, environmental protection, and chemical technologies tailored to meet the challenges of modern industry and defense

EU INDTECH 2025 Brokerage Event

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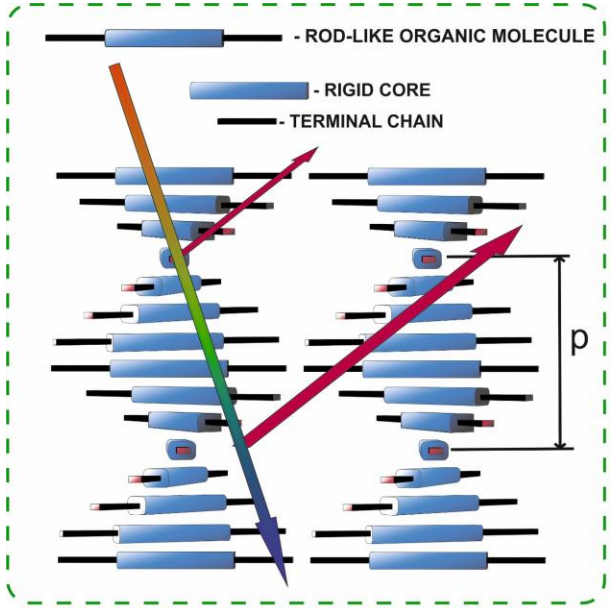
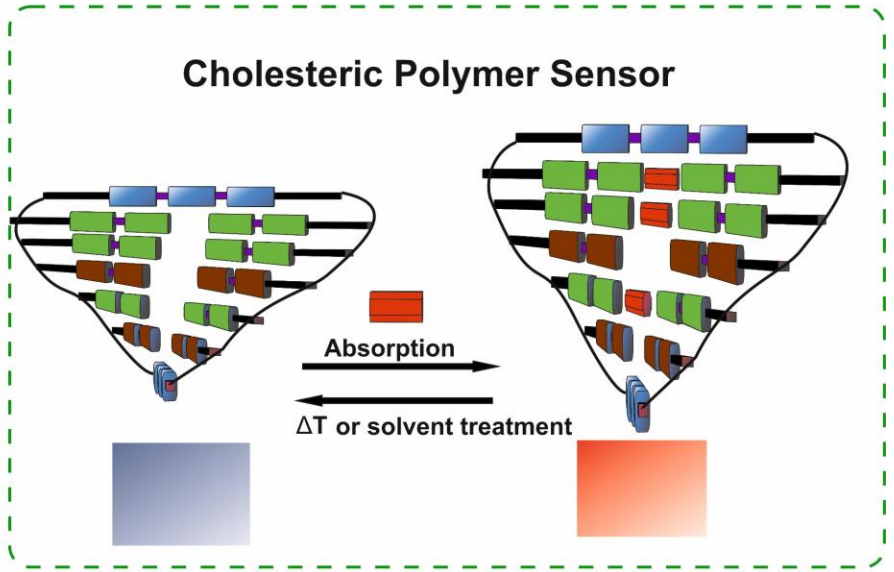
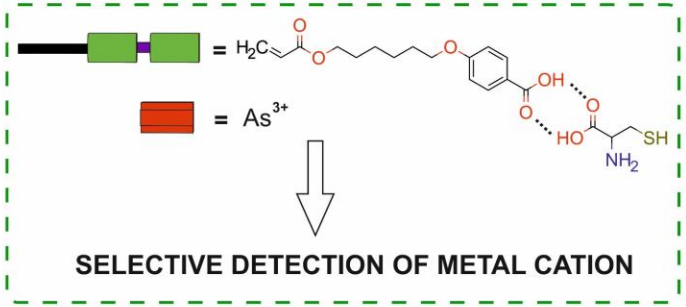
Project Idea

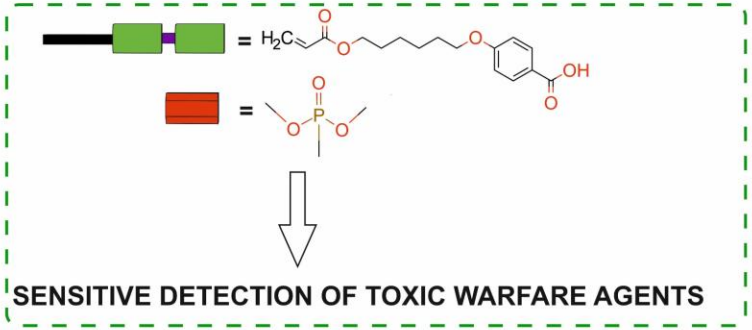
Advantages compared to current solutions:

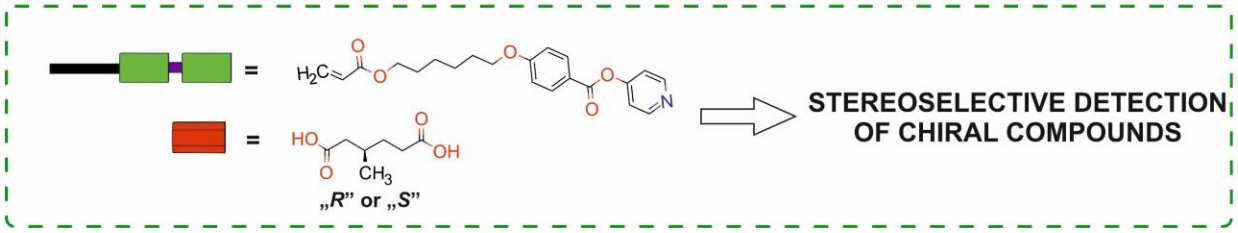
- Easy-to-use
- Battery-free
- Low-cost
- Use-in-place











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Competences / type of partners sought

We are seeking:

- **Application/testing partners** (e.g., industrial or defense sectors) capable of validating the performance of developed cholesteric polymer sensors in real-world conditions (e.g., environmental monitoring, pharmaceuticals, or chemical threat detection).
- **Manufacturing partners** with experience in polymer processing, scale-up, and device integration for sensor production and commercialization.

From our side, we provide expertise in **material synthesis, structural design, and fundamental research**, including optical, chemical, and molecular characterization of self-organized cholesteric systems.

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Contact details

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