

TECH OFFER

Low-Cost, Sustainable, Polymer-Based Touch and Pressure Sensing



KEY INFORMATION

TECHNOLOGY CATEGORY:

Electronics - Sensors & Instrumentation

Infocomm - Artificial Intelligence

Infocomm - Augmented Reality, Virtual Reality &
Computer-Simulated Environments

Healthcare - Medical Devices

Infocomm - Robotics & Automation

TECHNOLOGY READINESS LEVEL (TRL): **TRL7**

COUNTRY: **UNITED KINGDOM**

ID NUMBER: **TO175118**

OVERVIEW

The future of hardware interfaces is being redefined by this patented polymer-based platform technology, which features innovative design interactions, unique technology, lower costs, reduced size and weight, and enhanced sustainability. This patented touch-sensitive technology enables innovative solutions using conductive polymeric materials, interpreting touch location, gestures, and pressure through signal processing and machine learning. This solution simplifies manufacturing, boosts durability and sustainability, and saves clients at least 20% compared to traditional costs.

TECHNOLOGY FEATURES & SPECIFICATIONS

Creating advanced, cost-effective touch interfaces is challenging due to traditional buttons and multiple sensors. The solution simplifies this with a single flexible touch-sensitive material and AI algorithms, which precisely detect touch interactions on large surfaces. This approach offers clients customizable 3D interfaces, reduces component failure, enhances sustainability, and enables easy recycling.

- **Customizable Sensors:** Create sensors with industrial-grade plastic materials, giving manufacturers full control over design and styling.
- **Cost Efficiency:** Reduce assembly process costs by two-thirds by eliminating the need for printed metallic discrete sensor networks.
- **3D Seamless Surfaces:** Produce waterproof, durable, 3D seamless surfaces that offer more intuitive operation.
- **Versatile Integration:** Work with various 'A' surfaces (wood, fabric, stone, glass) using their proprietary polymer-based sensing layer.

POTENTIAL APPLICATIONS

Current industries:

- Automotive/Mobility
- Medical/Sport
- Consumer Electronics

The technology enables applications such as:

- Making appliances and surfaces smart with appealing finishes
- Enhancing tactile gaming and VR controllers
- Creating pressure mapping surfaces and medical devices that monitor user behaviors
- Developing ergonomic, user-friendly consumer products accessible to the disabled, visually impaired, elderly, and children.

UNIQUE VALUE PROPOSITION

Current market solutions, such as printed electronics, mechanical switches, mechatronic switches, and in-mold electronics, have clear limitations that the proposed solution addresses effectively.

Core Benefit Areas:

- Cost reduction on the usual bill of materials
- Increased design form and interaction options (sensify new shapes)
- Increased sustainability
- Waterproofing
- Durability
- Reduced device size, weight, and component complexity

The proposed solution offers significant improvements over mechatronic switches in several areas: complexity, cost, power consumption, reliability, maintenance, latency, environmental sensitivity, customization, design constraints, compatibility, cost of

repair, and noise.