

Features of ElastaSens :



- “**3-in-1**” functionality – resistive, capacitive & proximity outputs (enabling **higher accuracy** for flexible sensors).
- Ultra-light for low-weighting and different designs possible (can address **pressure, slip and shear**).
- Simple to manufacture and cost effective.
- Energy efficient, safe and low power.
- Easy to integrate and waterproof.
- Large ranges for pressure feedback (insulator to conductor).
- Sense from a feather-light touch to a heavy hammer blow.
- Easy to combine with other feedback technologies such as printed electrical stimulation, heaters & haptics.
- Sustainability - more enviro-friendly as based on ‘**Natural**’ Magnetite which is easy to identify for recycling and greener and more affordable than ‘**synthetically**’ manufactured carbon-nanotube or graphene-based inks.

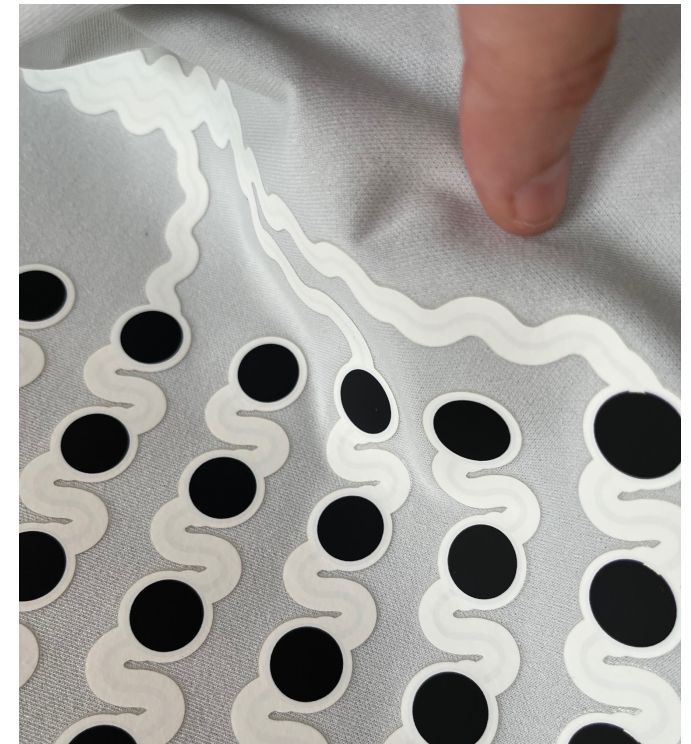
Healthcare Applications

Their **vast range** and **low power consumption** means they are perfect for textile pressure sensing and switching solutions ...whilst enabling environmental impact reduction to address the step change required in climate action.



Enabling affordable healthcare & wearable solutions eg.

- Prosthetic fit liners,
- Insoles for healthcare monitoring eg. for diabetes, elderly fall prediction & disease monitoring.
- Ulcer monitoring bed sheets & wheelchair seats.
- Bandage pressure monitoring.
- Disability assistance wearables.



Ai Gaming Tech Applications

Enabling exciting advancements to the world of **Ai Gaming Tech**... allowing wearables & user interfaces to be made more intelligent



In gaming, functions could now be based on pressure. For example, squeezing a glove harder could change your character's movement from a walk to a sprint, pressing your chest could heal an injury sustained in the virtual world or touching your head could make your character crouch down.

Virtual and augmented reality in gaming could take on a new dimension and psychological realism by transferring your **touch** to the virtual world and metaverse to enhance the authenticity and depth of the experience. Hardware now has the potential to become more intuitive, accessible, and inclusive.

Scrolling is easy.
Sensitivities can also be adapted for personalization.

Sports Applications

Enabling exciting advancements to the world of **Sports & Injury Detection**... allowing wearables and user interfaces to be made more intelligent



In sports, the same **Elastasens** sensors can be used to gather data. For example, cyclists could monitor the aerodynamic movements across their body from their vest or the pressures applied to their bike saddle via their shorts, enabling them to improve their performance.

Gloves could allow golfers to improve their swing by monitoring their grip on the club and swimmers could assess their dynamics through the water.

There is also the potential to identify sports injuries earlier, as a simple printed sensor liner placed under a rugby, boxing or cycling helmet or a set of sensors in football socks would enable not just the location of an injury to be identified but also how hard the impact was.

Military Applications

Enabling advancements to military wearables to make them more intelligent



- Helmet or gas mask 'fit' monitoring.
- Injury detection. 'Light-weight' wearable vests/suits/helmet liners that enable not just the location of an injury to be identified but also how hard/how serious the impact was.
- Operating and controlling equipment through wearables eg intelligent arm bands/ gloves.
- Man-down alarms in wearables.
- "Training gloves" to provide real-time feedback for training with equipment.

Sensitivities can also be adapted for personalization.

Robotics Applications

Enabling robotic skin, touch sensing and proximity sensing.



In robotics ‘first-touch’ and ‘proximity’ (safety) sensing textile-based affordable and light-weight skin could be produced for “Large Areas” of robots (eg. on arms and bodies) and could be simply sewn to fit.

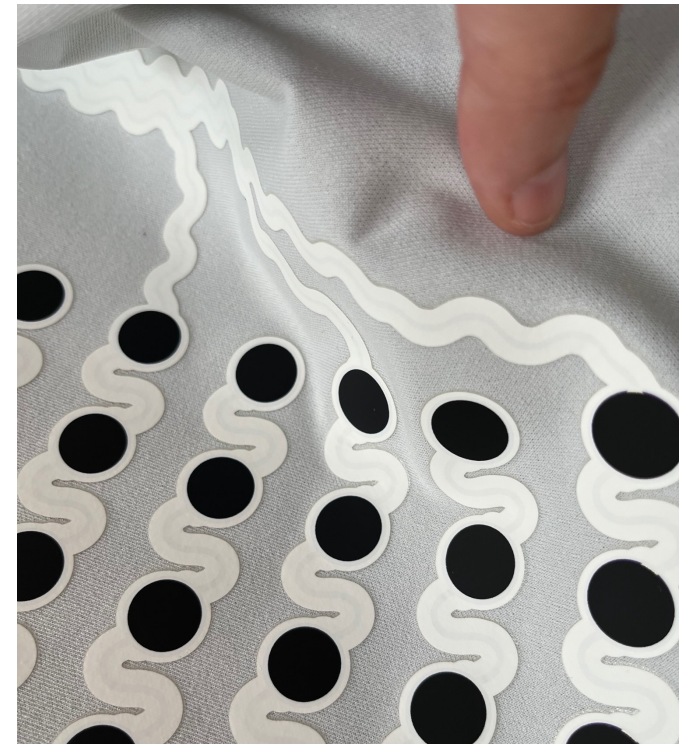
Sensitivities could be adapted.

Smart City Applications

Their **vast range** and **low power consumption** means they are perfect for textile pressure sensing and switching solutions ...whilst enabling environmental impact reduction.

Enabling affordable & more sustainable Large Area Electronics eg.

- Under carpet monitoring for elderly fall 'prediction' and man-down alarms and enabling elderly independence for longer in their own homes.
- Intelligent walls and gaming walls (like intelligent whiteboards).
- Utilising active surfaces to create the best intuitive user experience possible including interactive furniture and cushions/textiles etc.
- Create multi-functional surfaces.
- Intelligent packaging.
- Structural fatigue monitoring and earthquake monitoring of structures/ wind turbines ie. embedding intelligence in or on structures.



Automotive & Transport

Applications

Product differentiation

Enabling “light-weighting” solutions eg.

- intelligent seating.
- Steering wheel “hands-off” detection.
- Automotive/transport light-weight interiors- unique cockpit experiences for best driver experiences and personalization possible by adjustment of sensitivities.
- Creative freedom for ergonomics and aesthetics.
- Pressure sensing skins applied to external surfaces of vehicles to sense aerodynamics or for fatigue monitoring eg. aeroplane wings.

