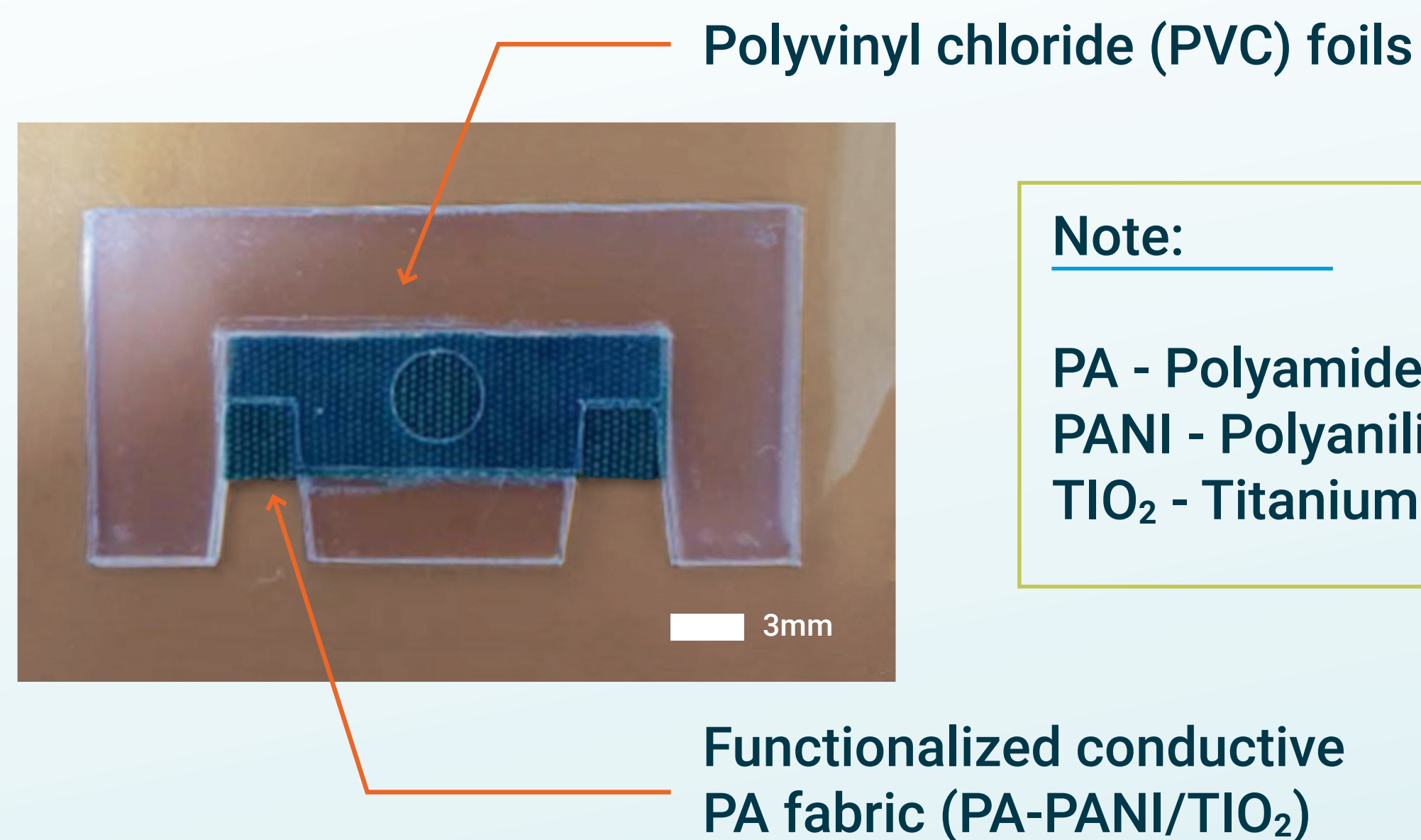


Fabrication of textile-based microfluidic chip sensor

- Functionalized conductive PA fabric was embedded in the chip.
- Xurography & hot lamination using PVC - for prototyping.
- A hole was made for injection of milk samples.
- Cow & goat milk samples in different forms were used.

Fabricated PA-PANI/TiO₂ textile-based microfluidic chip



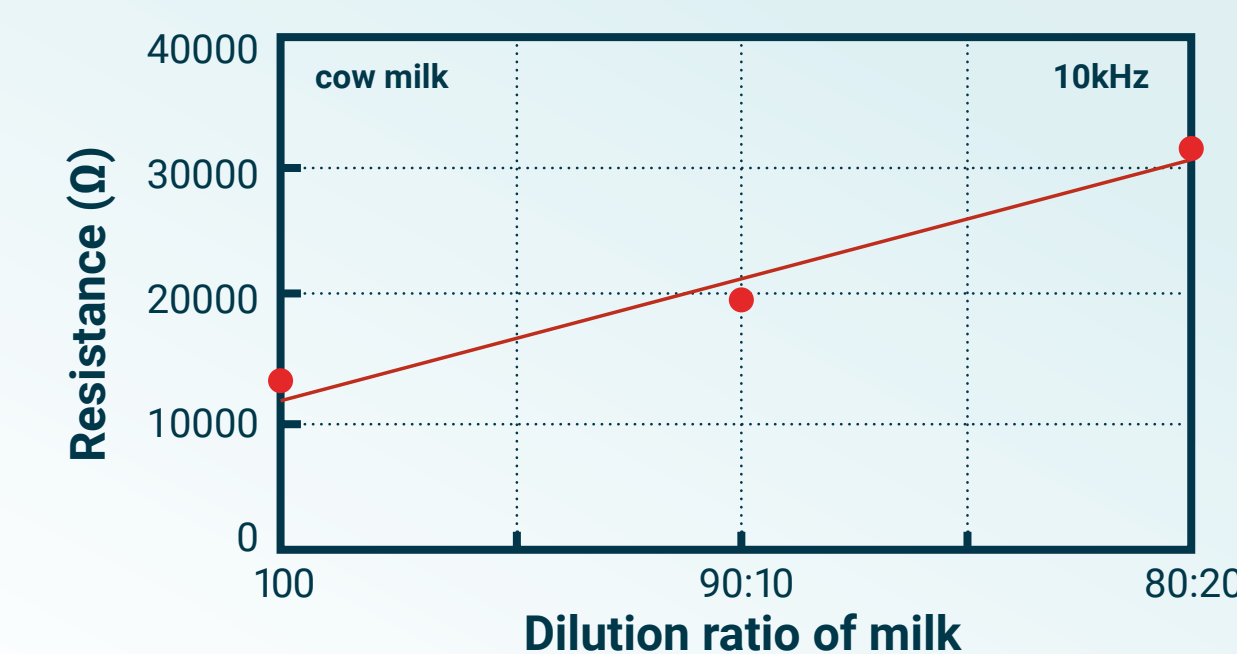
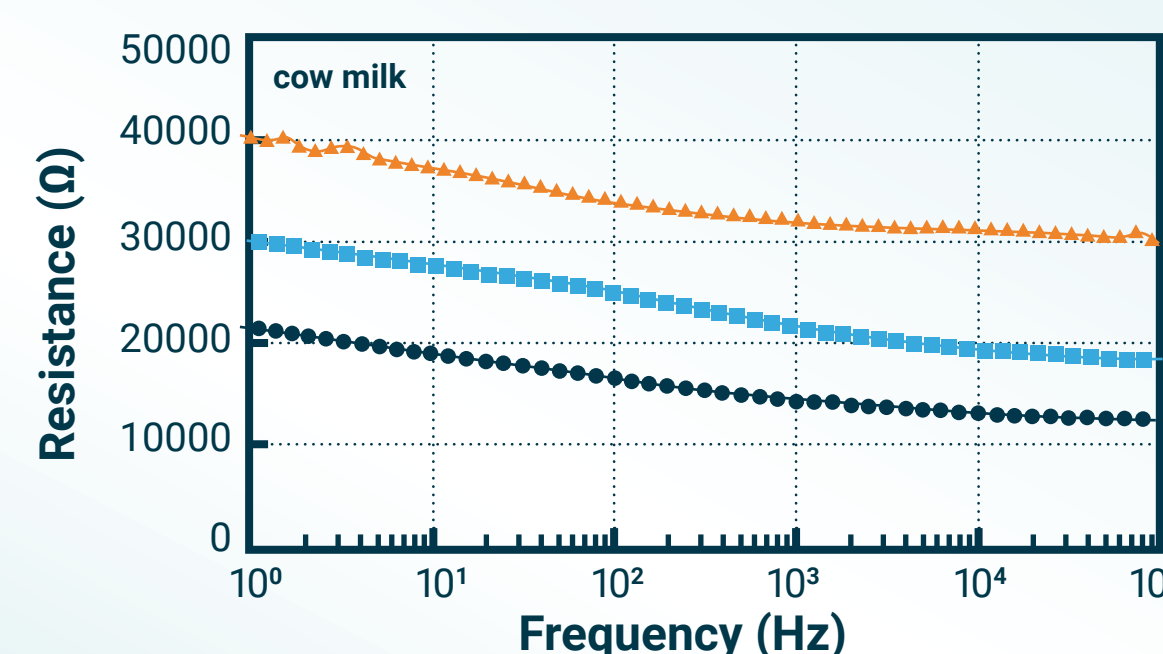
Note:

PA - Polyamide
PANI - Polyaniline
TiO₂ - Titanium dioxide

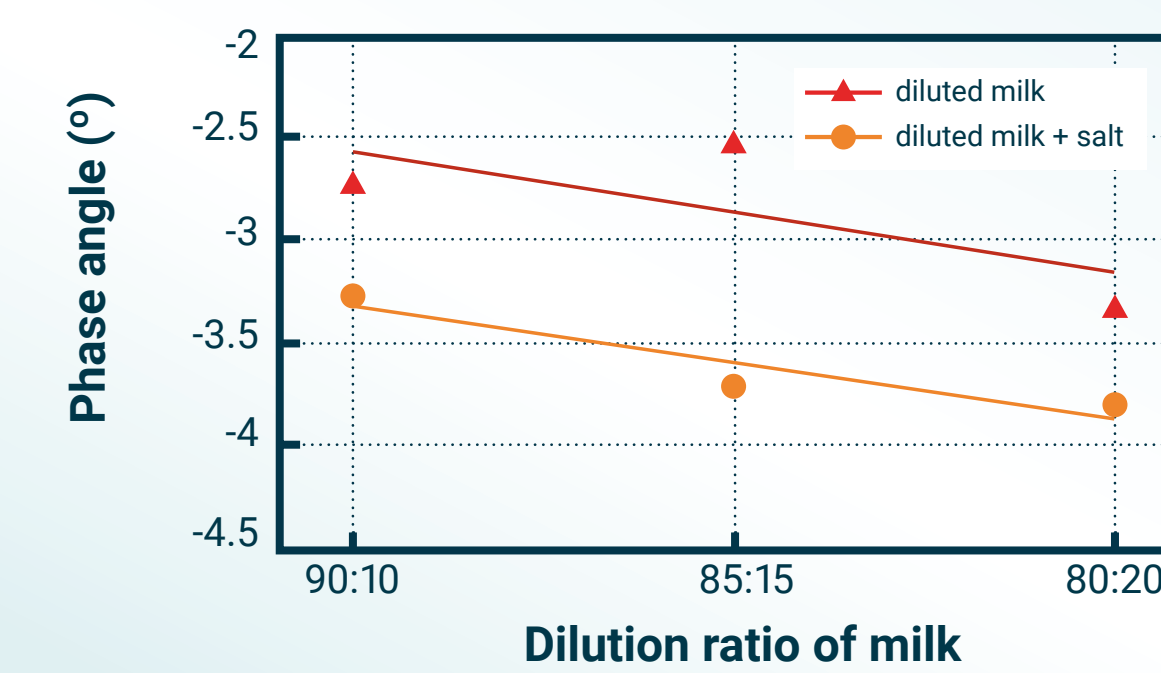
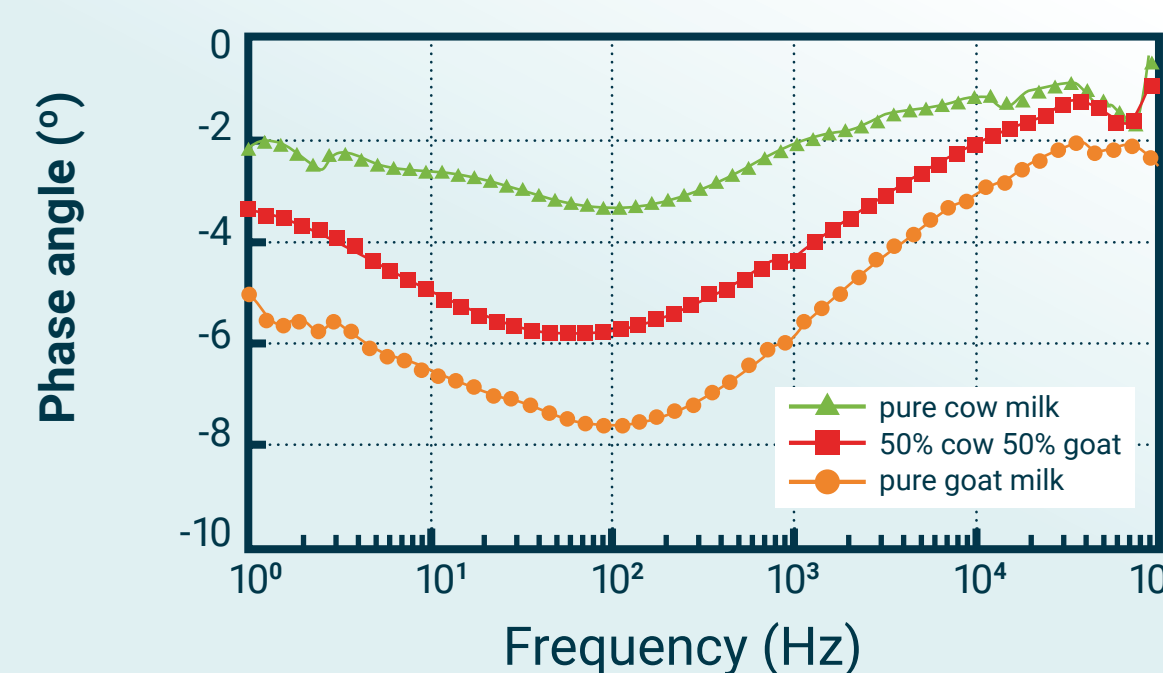
Electrochemical studies of milk samples using textile microfluidic chip

- Quality of milk was accessed in terms of the change in resistance & phase angle, as a function of frequency, of different milk samples using EIS technique.

Impedance analysis of pure & diluted cow milk



Phase angle studies of pure & diluted cow milk



Conclusion

- The fabricated microfluidic chip sensor demonstrated reliable and rapid sensing platform, with an overall good reproducibility.
- This work further promises the potential applications of textile electronics for food safety, point-of-care and environmental monitoring applications.