

# Electromechanical and microstructural characterization of fabricated piezoelectric poly(vinylidene fluoride) films

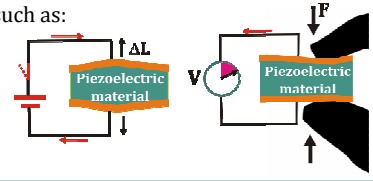
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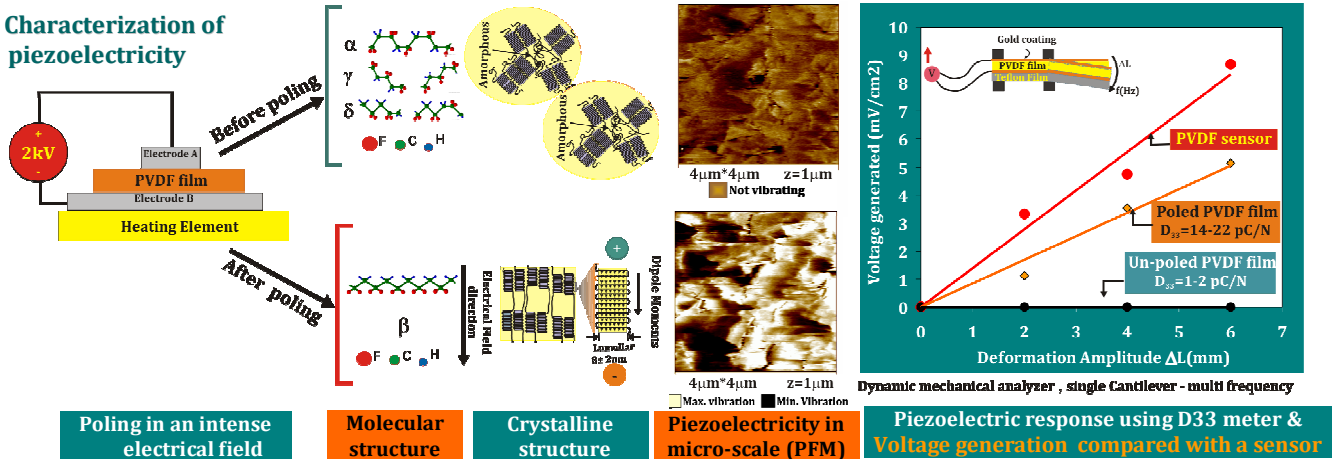
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## 1. Aim and Background

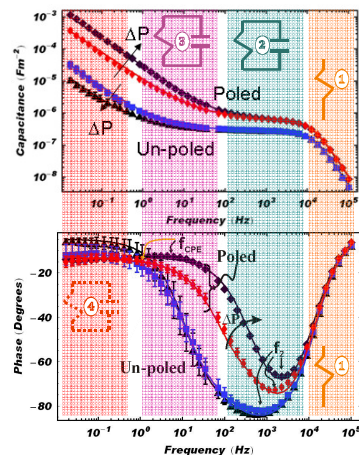
- The aim of this study was to fabricate piezoelectric PVDF films and characterize their structure and electromechanical properties.
- Poly vinylidene fluoride (PVDF) is a flexible piezoelectric material used in the fabrication of devices such as:
  - Sensors
  - Transducers and actuators
  - Electro- active micro and nano-devices
- To study the efficacy of methods used for induction of piezoelectricity in PVDF



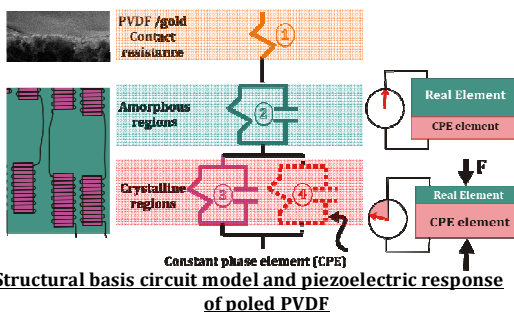
## 2. Characterization of piezoelectricity



## 3. Electrical impedance Spectroscopy (EIS)



EIS analysis of PVDF film before and after poling



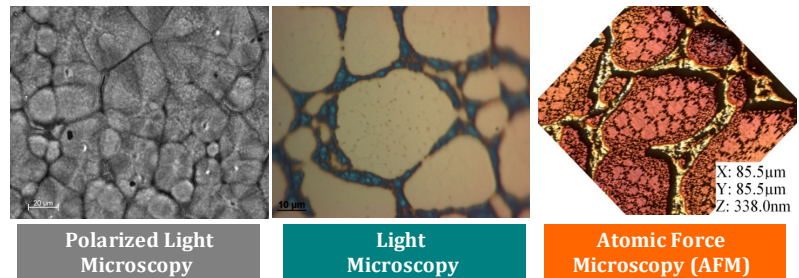
- Piezoelectric activity of beta-PVDF crystals was the major contributor to the CPE behaviour at low frequencies.

## 4. Conclusions

- Study of piezoelectric activity in PVDF at the molecular, micro and macro scales has provided an understanding of how fabrication processes can be controlled to enhance the performance of electromechanical PVDF devices.

## 5. Future work

- Investigating the effect of roughness, crystallinity and crystalline morphology on piezoelectric and impedance properties of PVDF



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## References

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