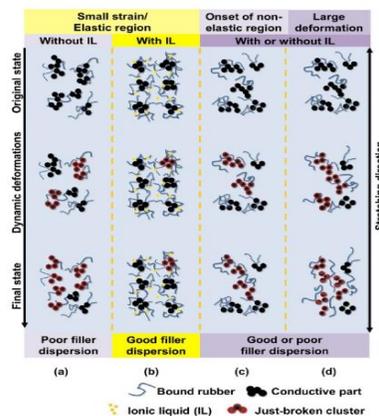


## Enhanced Responsiveness of Carbon Black Filled Conductive Rubber Composites as Small-Strain-Sensor at Slow Deformation by Using an Ionic Liquid

Conductive rubber composites, nowadays, are important in flexible piezoresistive strain sensing applications. In the composites, this is achieved by the loss of conducting contacts (the increase in electrical resistance) during deformation. Practically, the working ranges of the conductive composites are determined by the deformation range where the composites can provide a linear sensitivity and monotonic sensing behavior. In this work, small-strain-sensors based on conductive carbon black filled conductive rubber composites have been developed. An ionic liquid has also been used to improve the piezoresistive response with the independence of strain rate at small strains.

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Schematic representation of the arrangement of the conducting parts during dynamic deformation.

### Reference:

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