

Functional dielectric elastomers

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This presentation gives an overview of novel dielectric elastomers with high dielectric permittivity which allow construction of dielectric elastomer actuators operated at unprecedentedly low voltages and of piezoelectric elastomers that generate an electric signal when mechanically stressed. High permittivity elastomers were achieved by modifying polysiloxanes with polar groups. Piezoelectric elastomers were prepared by poling specially designed silicone composites under an electric field.