# DMA GABO DiPLEXOR® \* Simultaneous Dielectric (DEA) and Dynamic Mechanical Analyzer (DMA)

### **The Perfect Combination of DEA and DMA**

#### **With simultaneous DMA and DEA, the dynamic mechanical and dielectrical properties of carbon black-filled rubber compounds can be analyzed.**

Simultaneous dielectric (DEA) and dynamic mechanical (DMA) analyses allow for the determination of dielectric material properties under different mechanical loads.

With this combination, structural and dynamic mechanical information can be obtained. The DMA part investigates the viscoelastic properties of substances such as carbon black-filled rubber blends and compounds. The DEA part analyzes the intrinsic structure and distribution of the cluster within the polymer.

### **Monitoring of Structural Changes**

Only by combining DMA and DEA into a simultaneous analysis can one clearly understand changes in the structure, size and distribution of the cluster structure within the polymer matrix due to and during dynamic mechanical loading.

Dynamic mechanical specimen testing causes changes in the mechanical properties of a material. When the mechanical stress is halted, recovery processes are initialized which change the structure again. Only simultaneous DEA and DMA investigations allow for the monitoring of structural changes during dynamic mechanical sample loading processes.