



Yield, Plasticity and Ultimate Properties of Solid Polymers

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Message from the Guest Editor

The mechanical properties of solid polymers have been known for many years. Over the past twenty years, in this domain, there has been tremendous progress in fundamental polymer physics. This progress has been made possible by the development of new experiments regarding the dynamics of polymers in confinement, dynamics of fluorescent probes, in situ dielectric, or NMR spectroscopy. Studies of the ultimate properties and the corresponding microscopic mechanisms have benefited from progress in electron microscopy, ultra-small-angle scattering techniques, and in acoustic detection for studying, e.g., cavitation event statistics. New techniques that combine atomic force microscopy and dielectric or Raman spectroscopy are being developed to probe polymer properties on a local scale. Theoretical developments have led to new mesoscopic models that can describe the plastic properties of glassy polymers in a quantitative way and consistently with the basic requirements of statistical physics.

This Special Issue of the *International Journal of Molecular Sciences* will highlight these new trends and achievements.





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Message from the Editor-in-Chief

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