



Foreword

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This volume of the *Journal of Elasticity: The Physical and Mathematical Science of Solids Elasticity* contains a collection of sixteen papers, addressing topics under the heading of *Soft Matter Elasticity*. Elasticity entails recovery of effects, while soft implies matter that inherits its properties from an inner structure easily influenced by external agents.

We read in [1] that

The French version of soft matter was invented as a joke by Madeleine Veyssié in Orsay around 1970. It was a joke, because ‘matière molle’ has a double meaning in French.

But, progressively, soft matter appeared as a significant concept: comprising all physicochemical systems which have *large response functions*.

As may happen with successful species, the conceptual category of soft matter has evolved in time. The object of the science of soft matter elasticity now includes thermally, forcibly, spontaneously, or otherwise induced recoverable change in shape, state, or properties of liquid crystals, elastomers, gels, bendable thin bodies, polymer networks, or other condensed materials in a penumbra between solid and fluid continua, at times mediating interactions between particles, fibers, or voids. Such an ecumenical field calls for general theoretical tools to describe nonlinear and nonequilibrium behaviors and interpret experiments involving shear, bending, adhesion, vibration, and other phenomena.

Elasticity is a mature mathematical subject whose rigor can steer soft matter physics away from excessively empirical approaches. Soft matter is a newly established field whose questions about materials and processes can reinvigorate elasticity.

This volume was conceived as an attempt to foster discussion and mutual appreciation between groups of researchers whose interests overlap more than their historical publication habits might imply. We believe the contributions reflect, but far from exhaust, the breadth of activity and application ongoing across the shared domain of elasticity and soft matter. We hope that further cross-fertilisation will follow, resulting in due time in new growth and variety.

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Declarations

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