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### DESCRIPTION

The **Journal of Non-Newtonian Fluid Mechanics** publishes research on flowing **soft matter** systems. Submissions in all areas of flowing complex fluids are welcomed, including **polymer melts and solutions, suspensions, colloids, surfactant solutions, biological fluids, gels, liquid crystals and granular materials**. Flow problems relevant to **microfluidics, lab-on-a-chip, nanofluidics, biological flows, geophysical flows, industrial processes** and other applications are of interest.

Subjects considered suitable for the journal include the following (not necessarily in order of importance):

Theoretical, computational and experimental studies of naturally or technologically relevant flow problems where the non-Newtonian nature of the fluid is important in determining the character of the flow. We seek in particular studies that lend mechanistic insight into flow behavior in complex fluids or highlight flow phenomena unique to complex fluids. Examples include

**Instabilities, unsteady and turbulent or chaotic flow** characteristics in non-Newtonian fluids,

**Multiphase flows** involving complex fluids,

Problems involving **transport phenomena** such as **heat** and **mass transfer** and **mixing**, to the extent that the non-Newtonian flow behavior is central to the transport phenomena,

Novel flow situations that suggest the need for further theoretical study,

Practical situations of flow that are in need of systematic theoretical and experimental research. Such issues and developments commonly arise, for example, in the polymer processing, petroleum, pharmaceutical, biomedical and consumer product industries.

This list is meant to be representative, not exhaustive.

**Mathematical analysis** of equations relevant to non-Newtonian flows

**Numerical methods** suited to problems in flowing complex fluids

Development of rheological **constitutive equations** for non-Newtonian fluids from both continuum and microstructural starting points.

Experimental assessment of predictions from rheological constitutive equations.

Devices and methodologies for **rheological measurements** at both macro- and microscopic levels, including **microrheology**.

Overly abstract, formalistic or artificial developments will not be welcomed.

## AUDIENCE

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Applied Mathematicians, Chemical and Mechanical Engineers, Materials Scientists, Polymer Scientists, Industrialists involved in the processing industries, Rheologists, Fluid Mechanicists, Numerical Analysts.

## IMPACT FACTOR

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