

ADVANCED FUNCTIONAL MATERIALS

Sheared Nematic Polymer Nanocomposites

Recent Advances in Monodisperse Colloidal Spheres
Biomimetic Formation of Hydroxyapatite Nanorods
Hybrid Solid-State Electrolytes for Solar Cells

unsteady during processing. The results of this paper apply to these local sheared monodomains, whose quantitative features will be modified through spatial coupling and distortional elasticity. Indeed, in Forest *et al.*^[1], we combine results from the present paper, Zhou *et al.*^[2] and Zheng *et al.*^[3] to indicate heterogeneous effective properties. Another important result in NPNCs is strong density variations of the density developed

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$$\mathbf{D} = \frac{1}{2}\dot{\gamma} \begin{pmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}, \mathbf{\Omega} = \frac{1}{2}\dot{\gamma} \begin{pmatrix} 0 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}$$

Peclet number, $Pe = \dot{\gamma} D^2 / \nu$, is the normalized flow-rate parameter. The first moment of the PDF,

$$\mathbf{M} = \langle \mathbf{mm} \rangle = \int_{-\infty}^{\infty} \mathbf{mm} f(\mathbf{m}) d\mathbf{m}$$

