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Multiscale Analysis of Polymer Nanocomposites

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Message from the Guest Editors

Polymer nanocomposites are heterogeneous materials, exhibiting novel multi-physical phenomena that are linked to interactions at the smallest scales. These interactions cause significant alterations of the local physical properties – in particular, of the matrix phase (for instance, transition and/or modification of phase, specific conformation, modification of the degree of crystallinity for an organic polymer matrix, etc.). For such nano-reinforced materials, interactions at small scales (between nanofillers and the matrix, or between different nanofillers) are no longer negligible and must be interpreted and modeled in a multi-scale framework.