In the dynamics problem of complex system consisting of many parts having different physical properties like partially-molten material, it is difficult to understand all of the intrinsic nonlinear phenomena without considering the microstructure having deformable feature over the macro scale. We have developed a suitable numerical experimental method for the problem. It is expected that the nonlinear dynamics is systematically understood by control of physical properties and the internal structure. In particular, controlling wetness which is important in micro dynamics, our method can reproduce any deformable complicated microstructure like melt-network in partially-molten state. We study the dynamics of the complex with this numerical method.