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Red blood cells and platelet aggregation in small blood vessels via Dissipative Particle Dynamics. IGOR PIVKIN, PETER RICHARDSON, GEORGE KARNIADAKIS, Brown University, Providence, RI, USA — Blood is composed of a liquid component and cellular components. The cellular components include red blood cells and platelets. Explicit simulations of the cellular components require computational methods capable of tracking time-varying fluid-solid interface. The Dissipative Particle Dynamics (DPD) is an inherently adaptive method and potentially very effective in simulating complex fluid systems. In DPD, the fluid and solid objects are represented as a collection of interacting points, each representing a group of atoms or molecules. We will present results on the effects of the red blood cells on the platelet aggregation in a small blood vessel using DPD.

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