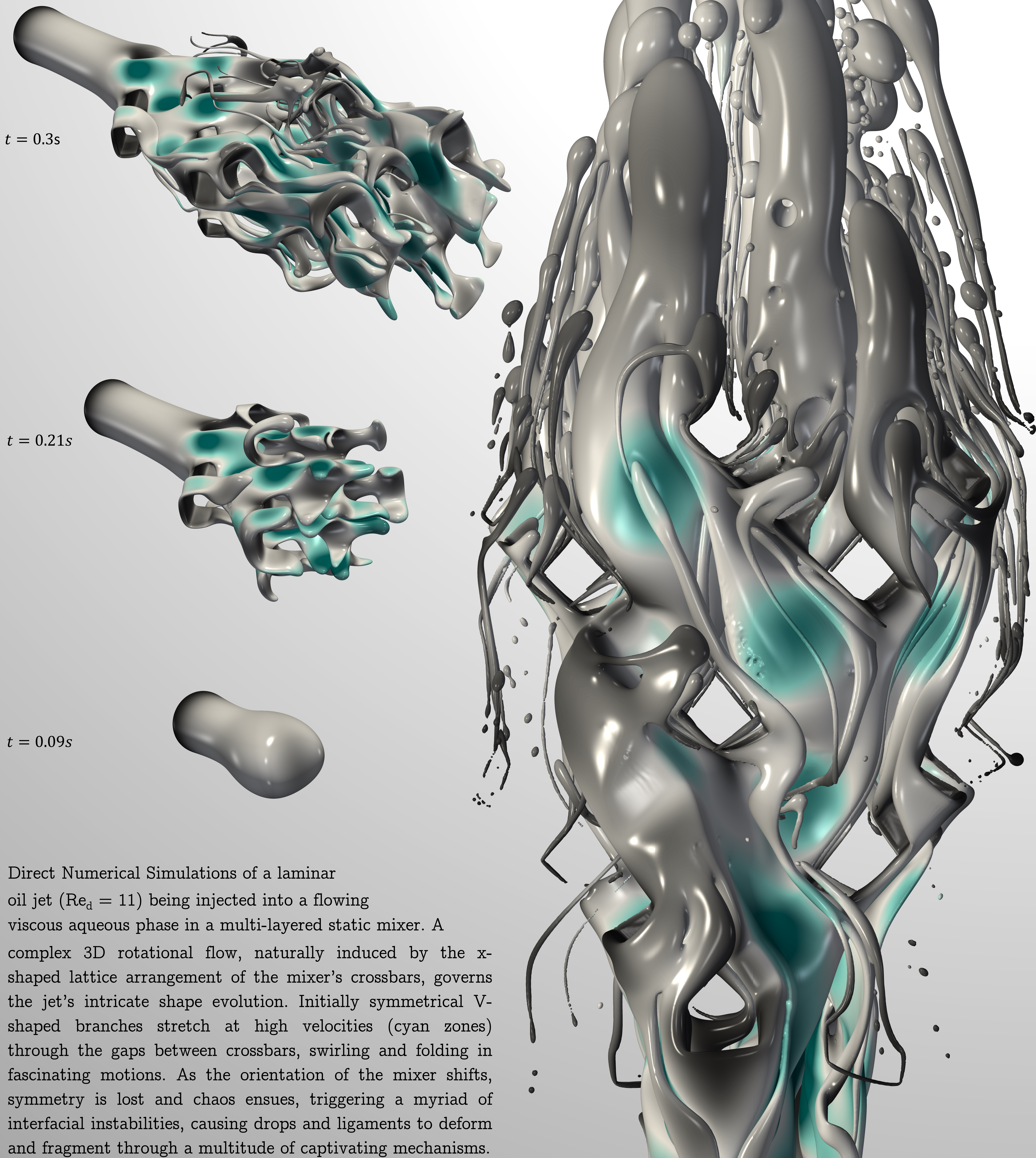


Convoluted interfaces in laminar dispersing jets

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Direct Numerical Simulations of a laminar oil jet ($Re_d = 11$) being injected into a flowing viscous aqueous phase in a multi-layered static mixer. A complex 3D rotational flow, naturally induced by the x-shaped lattice arrangement of the mixer's crossbars, governs the jet's intricate shape evolution. Initially symmetrical V-shaped branches stretch at high velocities (cyan zones) through the gaps between crossbars, swirling and folding in fascinating motions. As the orientation of the mixer shifts, symmetry is lost and chaos ensues, triggering a myriad of interfacial instabilities, causing drops and ligaments to deform and fragment through a multitude of captivating mechanisms.