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**Studies on Drop Formation Process under Direct Drop Regime of a Spinning Disc**[1] KSHETRAMOHAN SAHOO, SANJEEV KUMAR, Indian Institute of science — Wetting issues encountered at low flow-rate in a spinning disc is overcome by placing a wet filter paper on its surface. The periodicity of drop release and progress of drop formation process are probed by high speed imaging. Periodicity of Primary drop formation is reported both at entire disc as well as single site level. An individual drop formation site exhibits aperiodic release of primary droplets. The distribution of overall interval of quiescence is verified to be Poissonian. Based on the observations from a large number of drop detachment events key stages of drop formation process are delineated. Shortly following release of a primary drop (PD) secondary drops (SD) are released from the unstable thread by capillary instability. The remnant of thread gets quickly pulled back for slow formation of a new bulge. Sequential transition of the sinusoidal fresh bulge to triangular shape (TS), inverted U shape (US), and Pear shape (PS) before ultimate release of another primary drop (PD) are time tracked at two rotational speeds. A non-linear relationship between necking time (PS-PD transition time) and disc rotational speed is proposed for drop formation from a spinning disc.

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