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A Study of Ferrofluid Shape Formation under Influence of Magnetic Field from Various Permanent Magnet Shapes

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When ferrofluid is in a presence of external magnetic field, different peak patterns are formed depending upon shape and magnetic field strength of permanent magnets. In this study, 2 dimensional magnetic field distribution from different magnet shapes were mapped and compared with the simulated magnetic field distribution in order to use magnetic field strength at particular location to calculate magnetic force exerting on ferrofluid. Balance between ferrofluid surface tension and magnetic force on ferrofluid leads to a good approximation of peak pattern distribution of ferrofluid.

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