single vertical partition

nested rectangle partition

square block partitions

multiple parallel partitions

Effect of Partitions on Glycerin Flow in Thin Enclosures

The objective was to investigate the effect of partitions on the overall visual impact of flow of glycerin in thin enclosures (1.6 mm spacing). Several acrylic enclosures with different styles of partitions were made. Each enclosure contains equal volumes of dyed glycerin and air. Upon being turned upside down, glycerin flows down and air pockets rise up, demonstrating a number of interfacial phenomena such as surface tension effect, drop formation, wetting, flattened bubble dynamics, and instability due to density differential. Although all partitions altered and created visually engaging interactions between the two fluids, the multi-parallel partitions (image with red food color) produced the most intriguing case, e.g., pressure fluctuations among columns.

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