

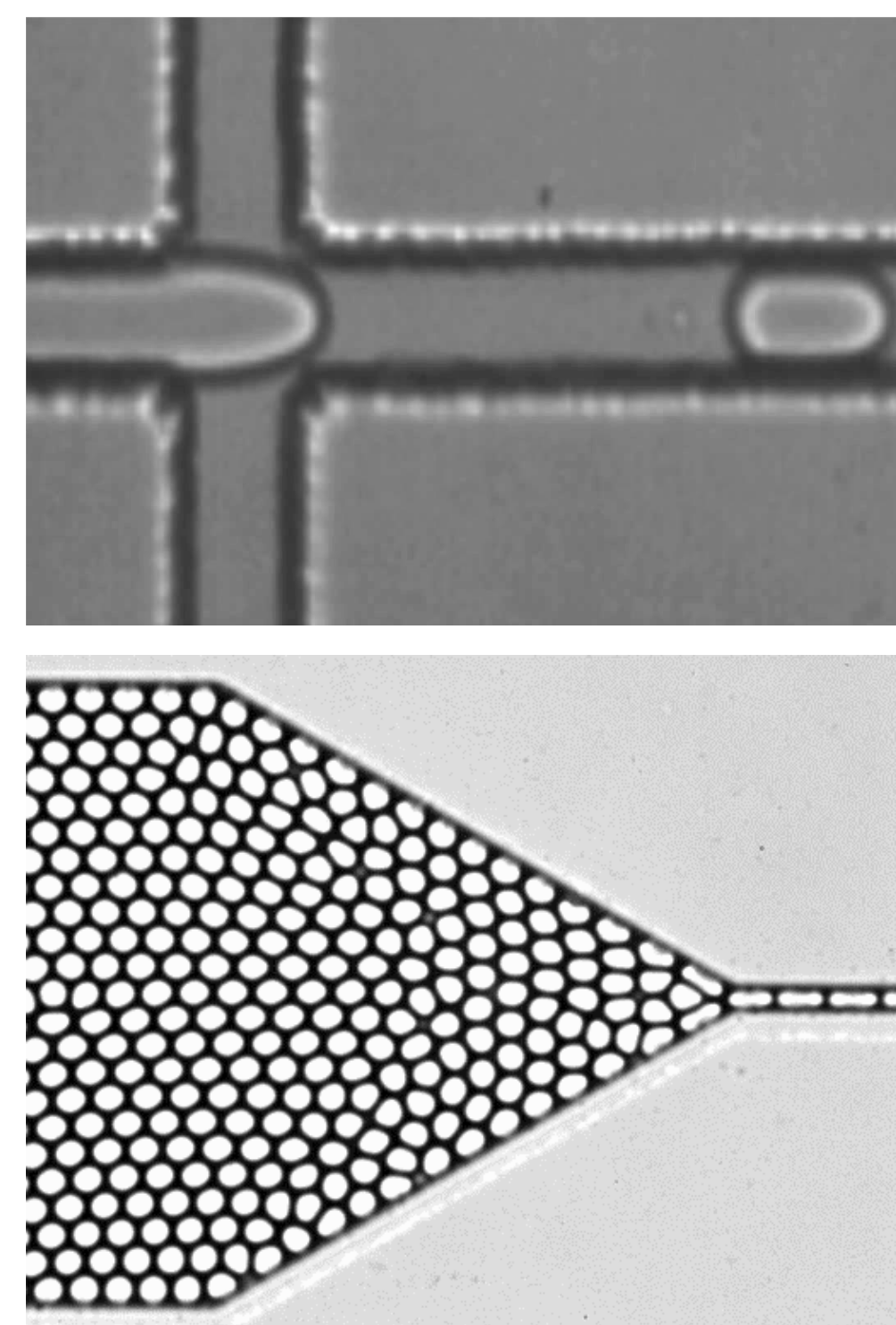
Image Processing Algorithm for Drop Breakup Characterization

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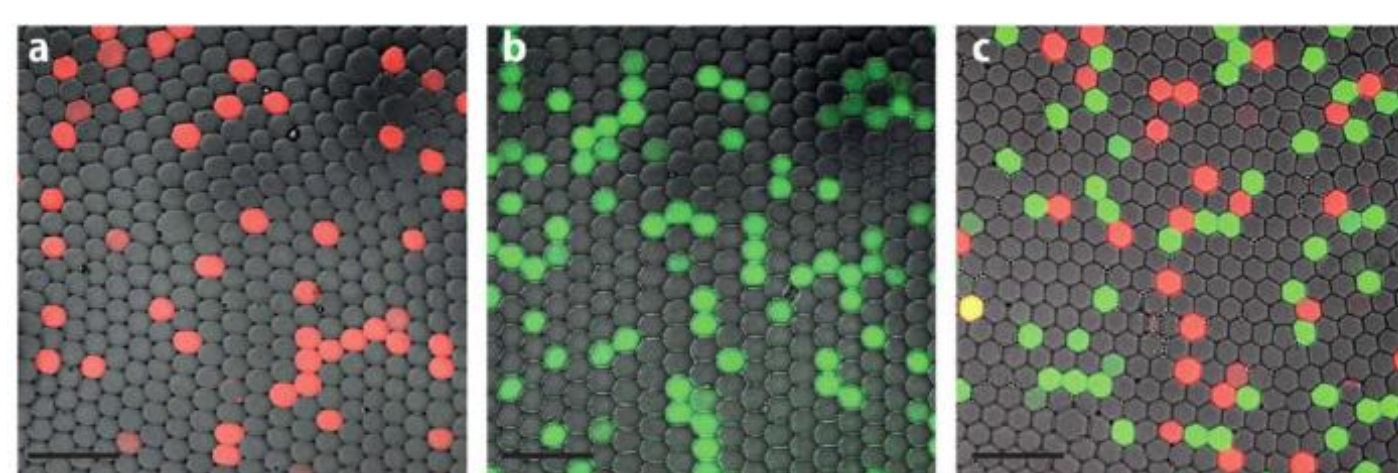
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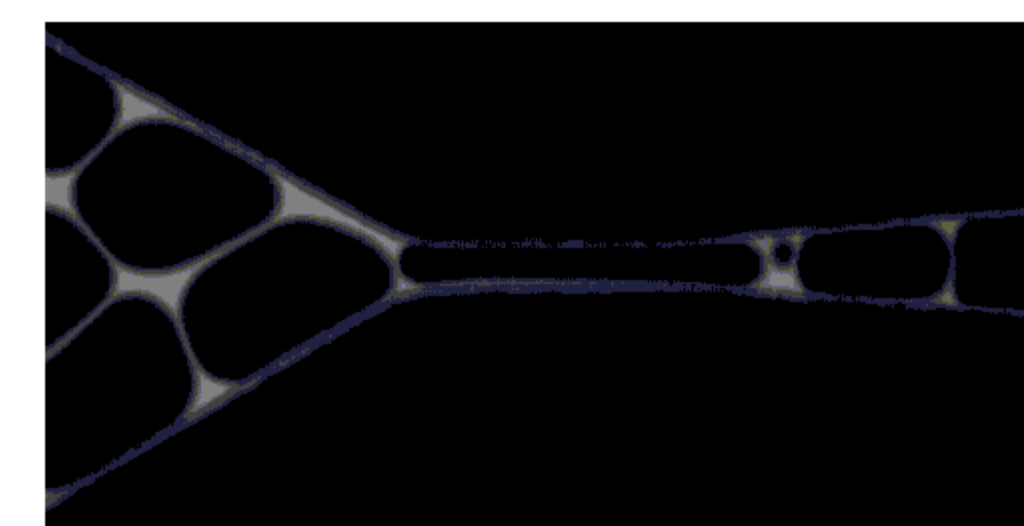
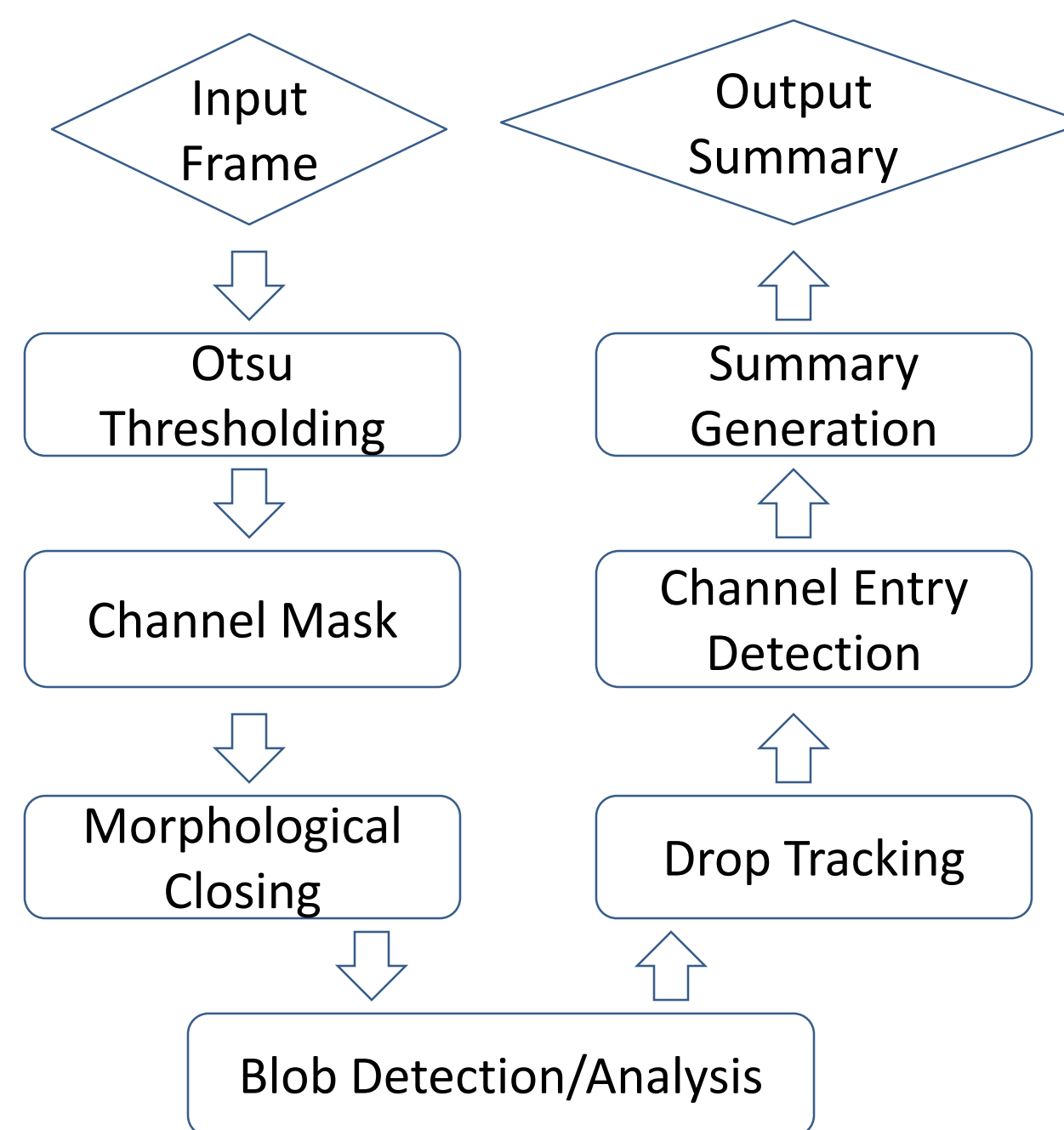
Motivation



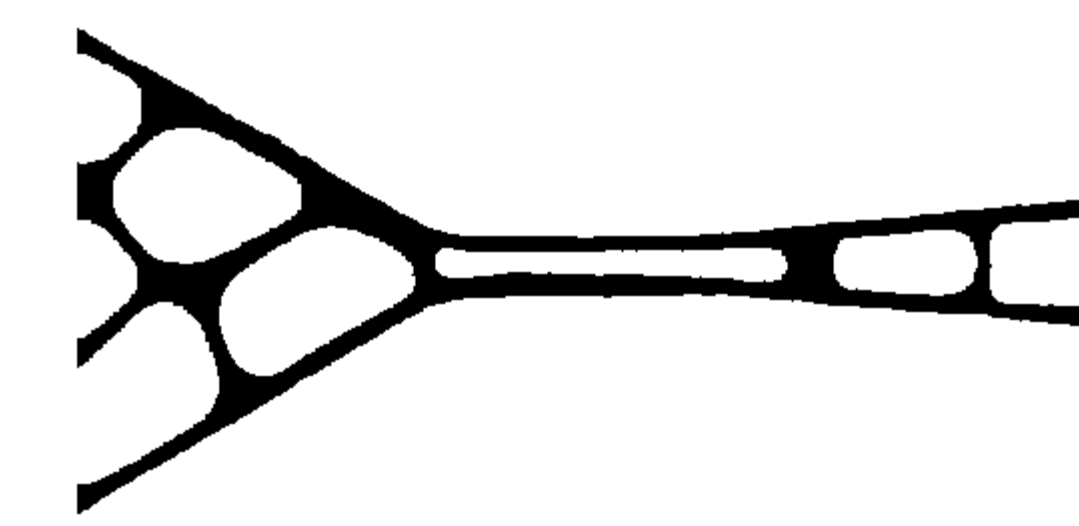
- Use drops as Bio-reactor
- High-throughput assays can fail when drops break
- Drops break flowing through constriction at high flow velocity
- Use image processing to study why drops break



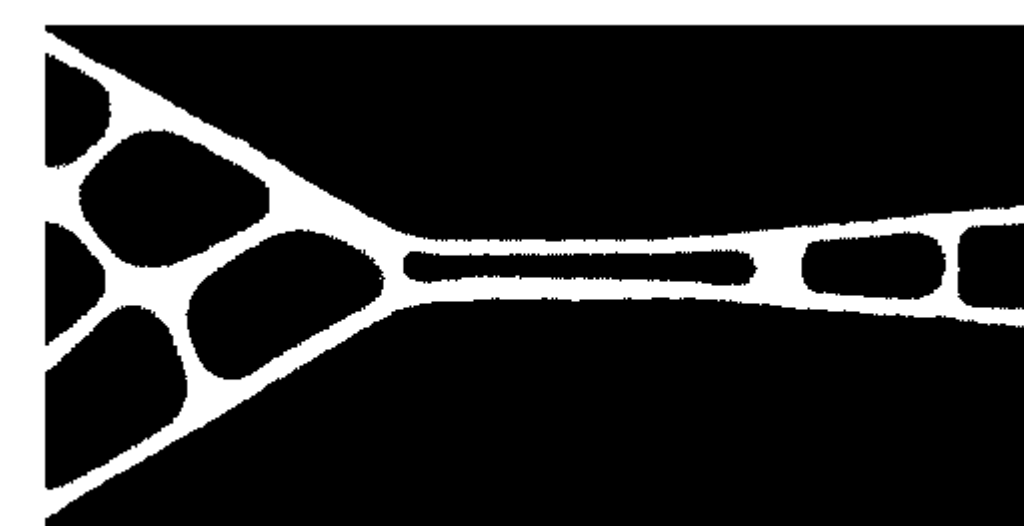
Motion Estimation Technique



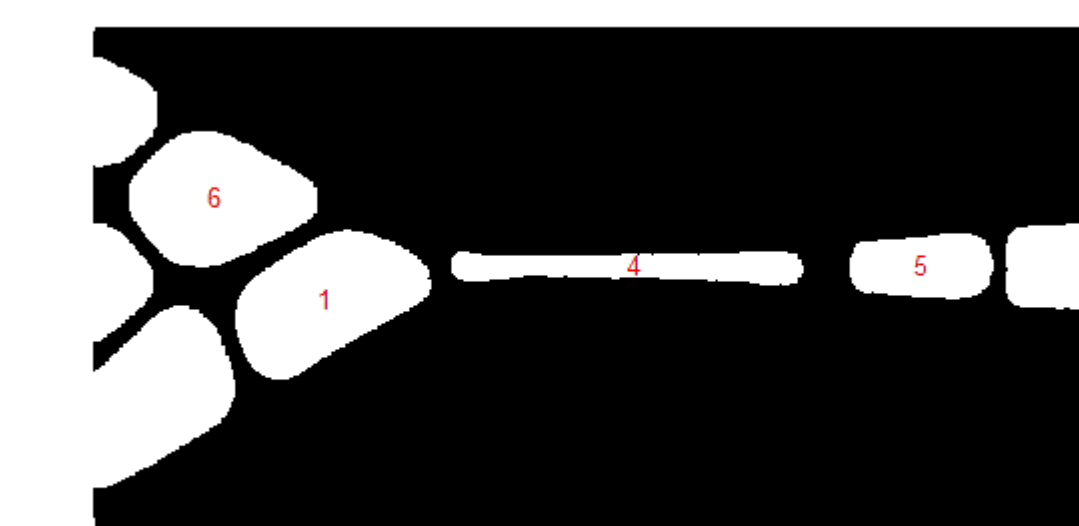
Raw Image



Otsu Method + Closing



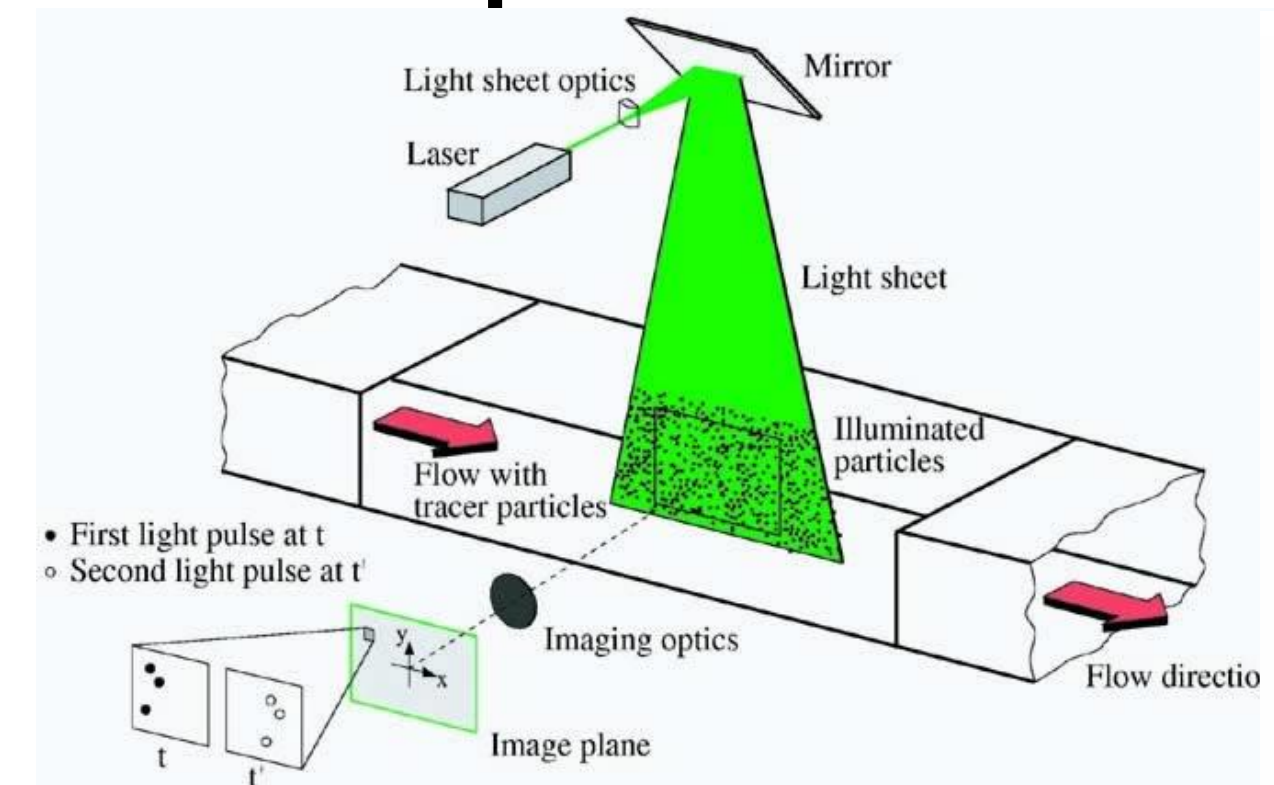
Otsu Method



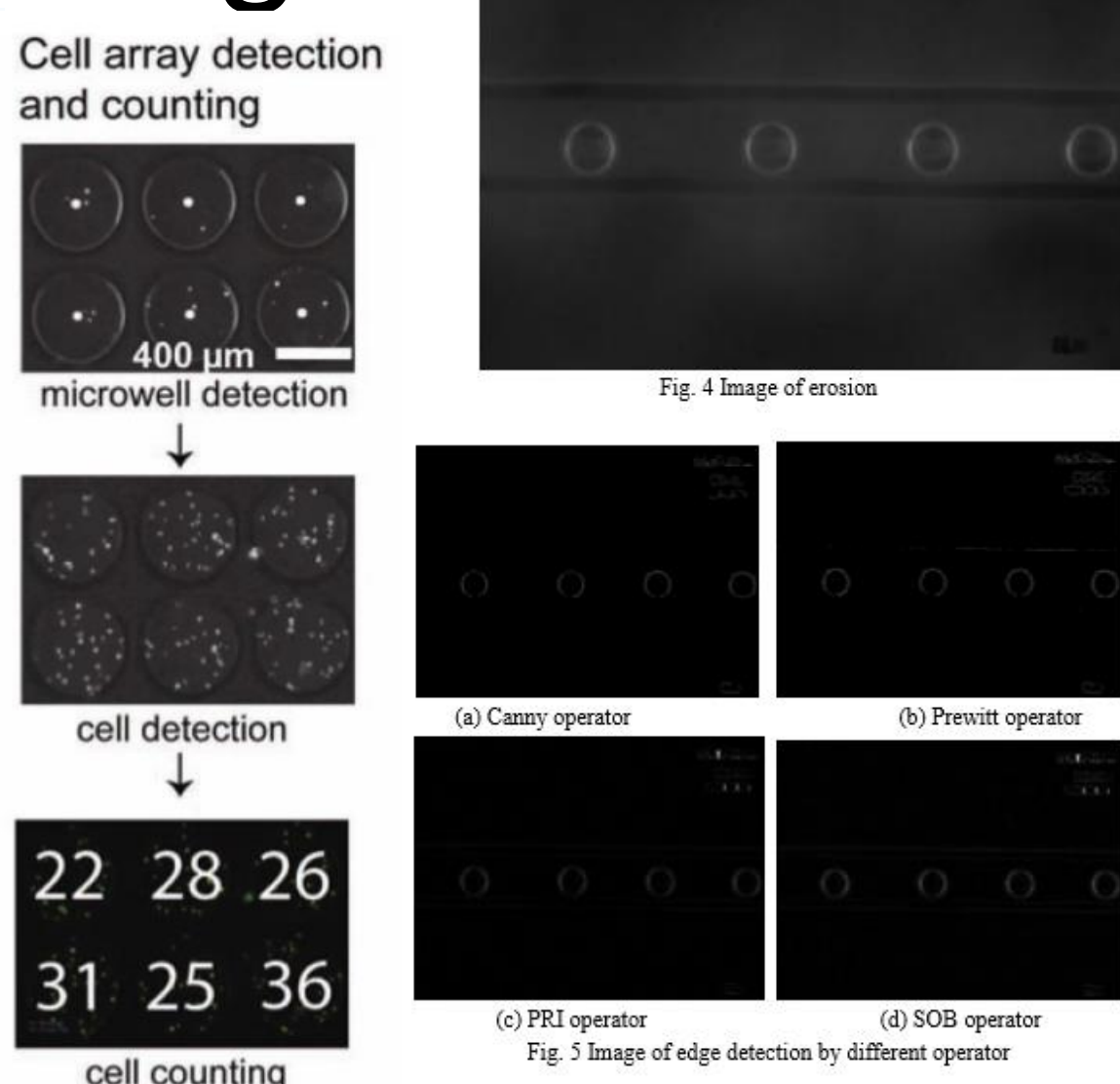
Drop Labeling

Related Work

- Particle Image Velocimetry
- Drop/ Cell Tracking



- References:
1. Pekin et al. Lab Chip, 2011, 11, 2156-2166
 2. Santiago et al. Experiments in Fluids, 1998, 25,4 316-319
 3. WeiWei et al. Proceedings of 2013 ICME, 2013, 518-522
 4. Kachouie et al. Biotechniques, 2009, 47(3) x-xvi



Experimental Results

