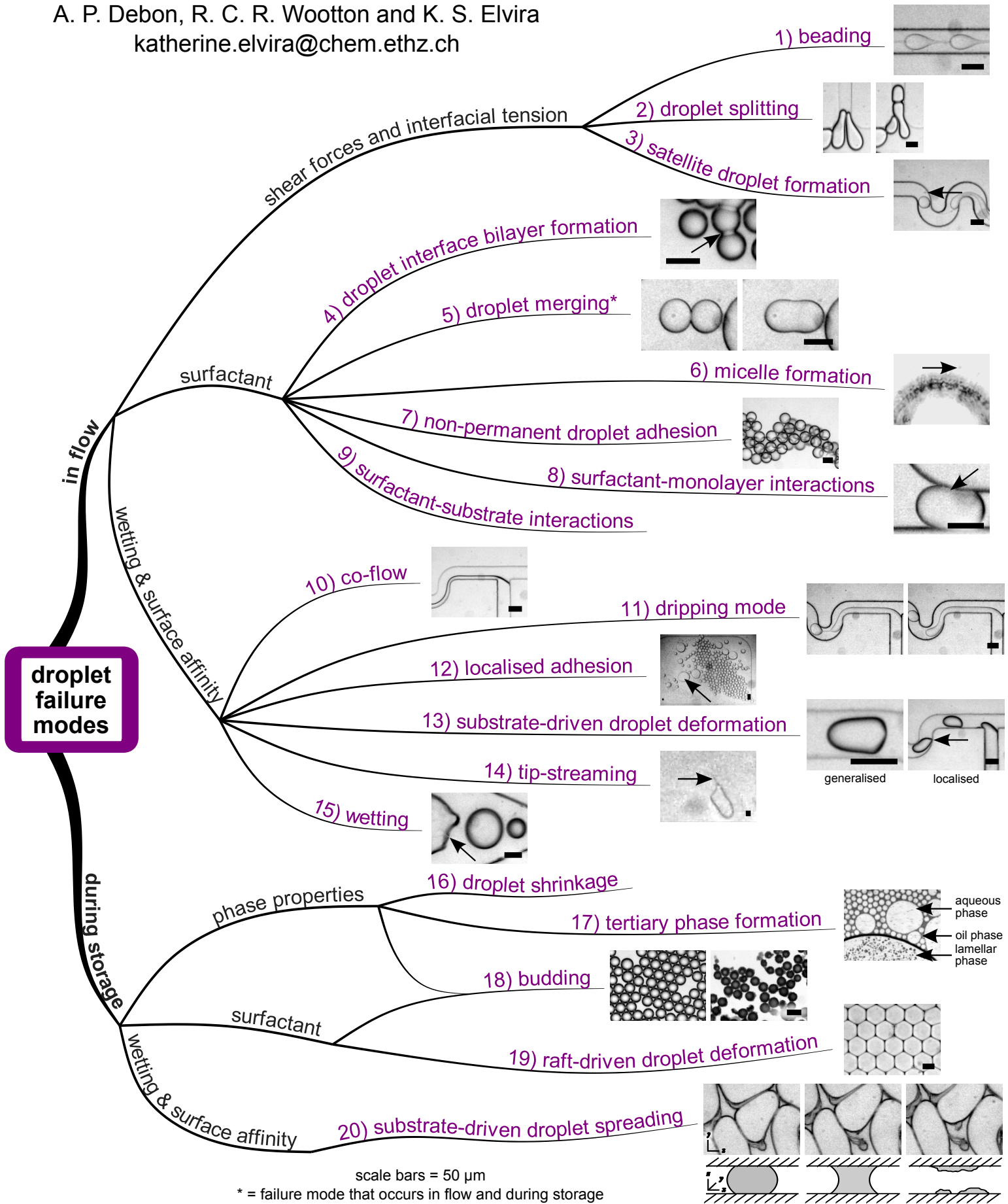


Droplet Failure Modes and Amelioration Strategies

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Amelioration strategies

- 1, 11: vary flow rates, adjust differential viscosities, attempt device recovery.
- 2: use lower flow rates, use smaller droplets, vary device geometry.
- 3, 6, 14, 18: reduce surfactant concentration.
- 4, 7, 19: increase oil fraction, decrease surfactant concentration.
- 5: apply symmetrical shear stress to droplets, increase oil fraction,

- avoid channel expansions or contractions.
- 8: add different surfactant with higher affinity for the channel surface.
- 9: attempt device recovery.
- 10, 12, 13, 15, 20: attempt device recovery and re-silanisation.
- 16, 17: store device in oil or water, alter osmolarity of dispersed phase.