Gain Engineering with Additional Interface Roughness Scattering

in Quantum Cascade Lasers

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“Quantum Cascade Laser”

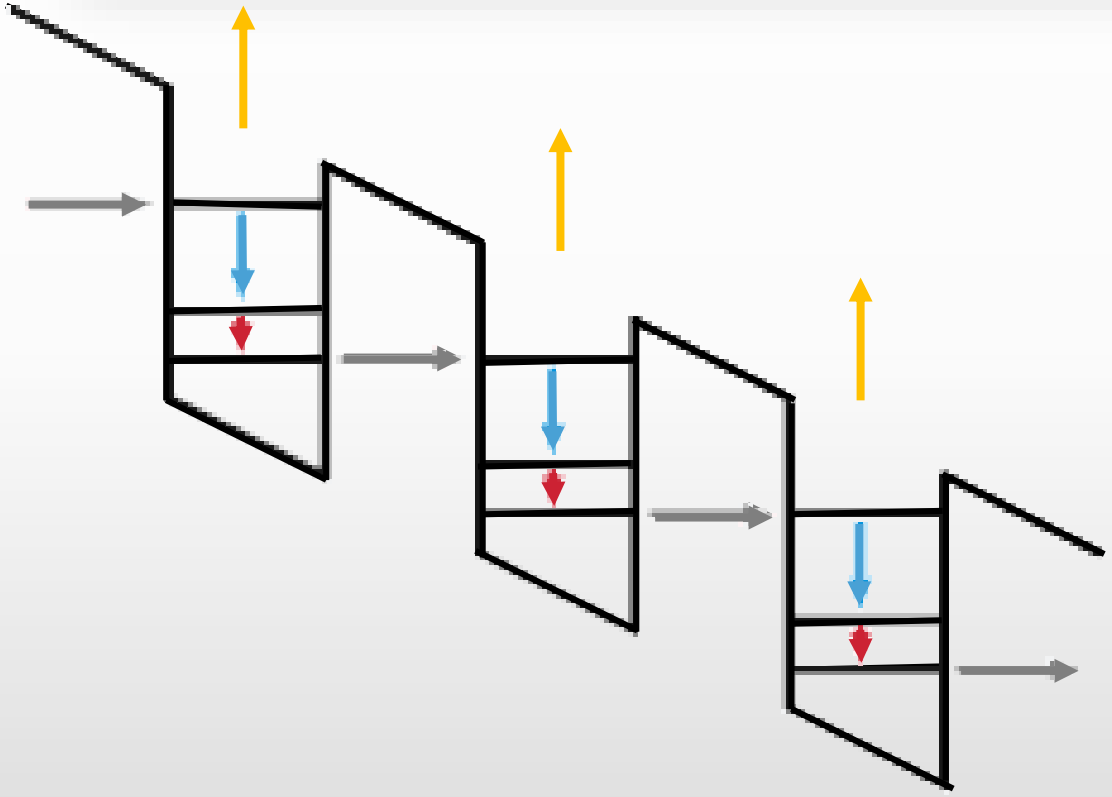
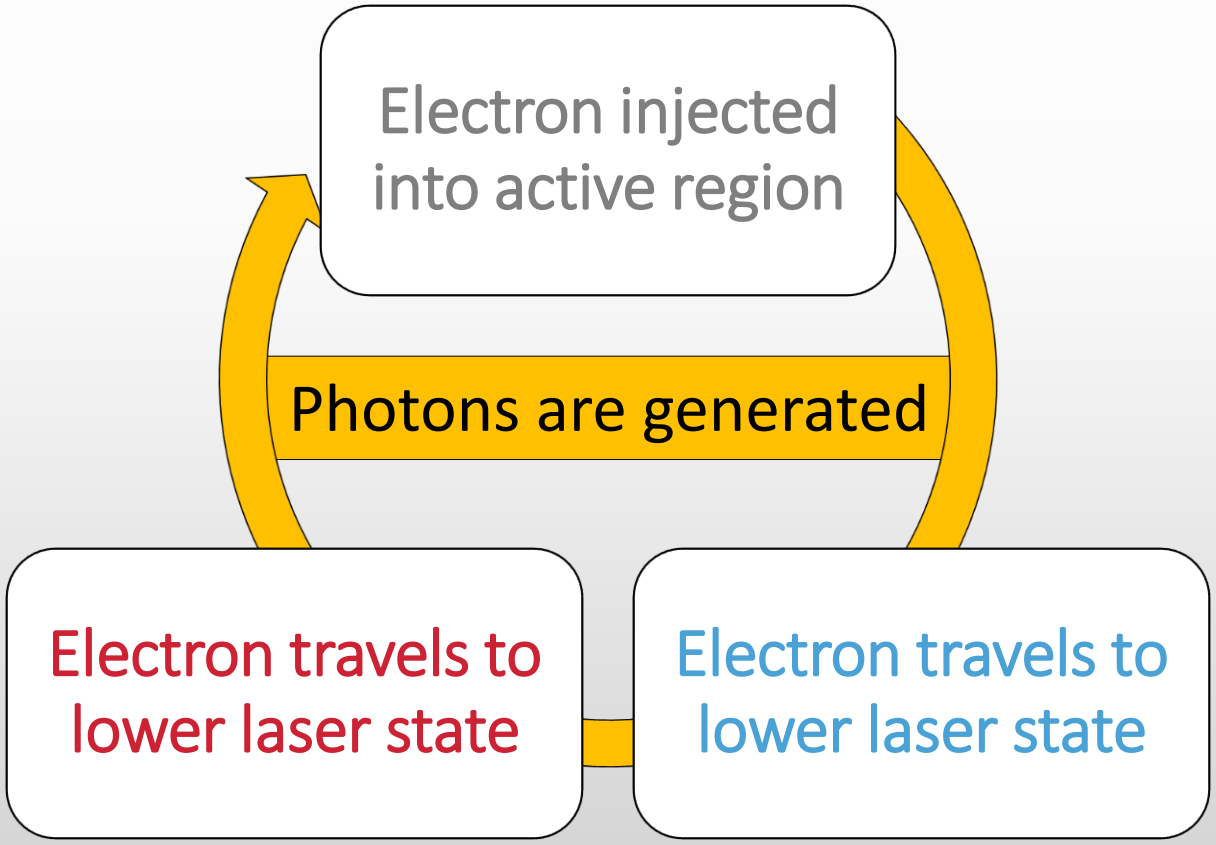


Fig 1. Quantum cascade laser schematic illustrating how electrons travel through the quantum wells

How Quantum Cascade Lasers Work



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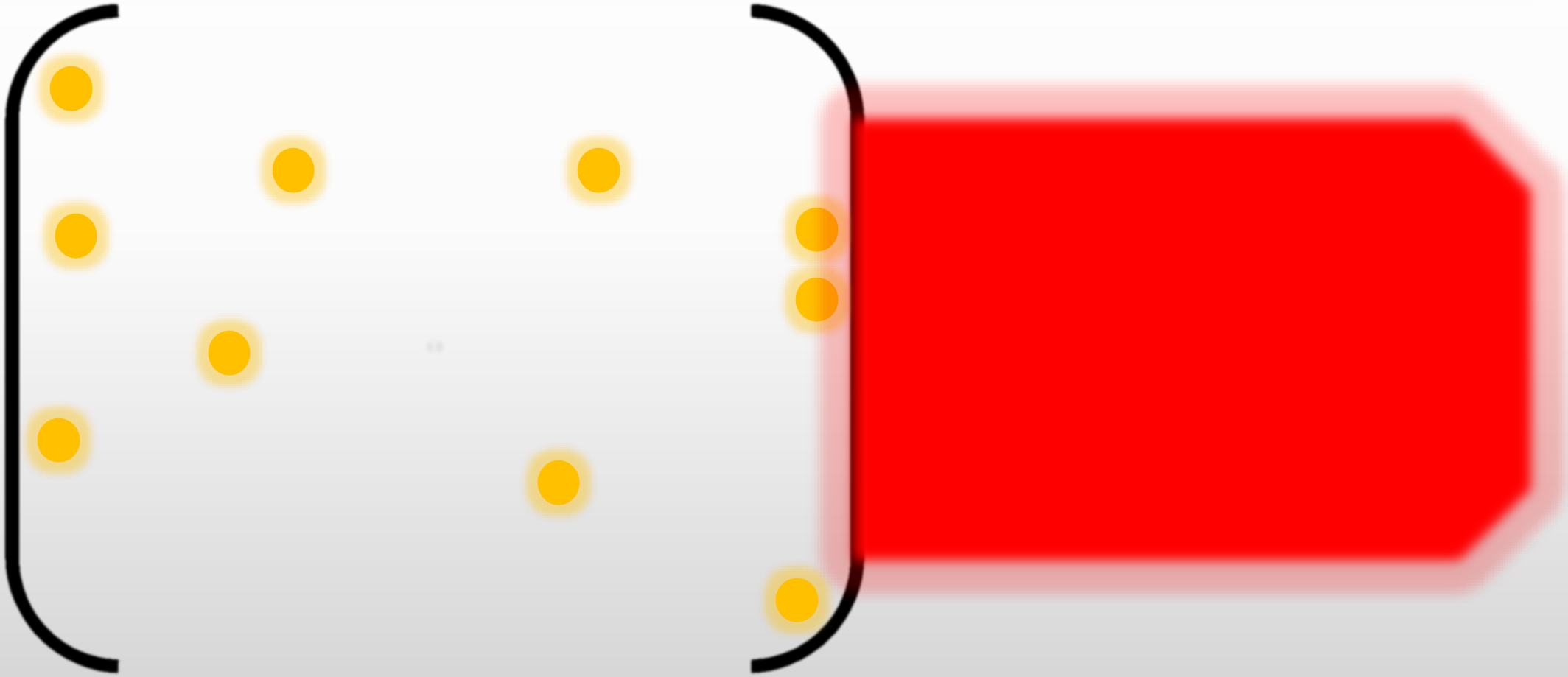
"Gain Engineering"



Facet

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"Interface Roughness Scattering"

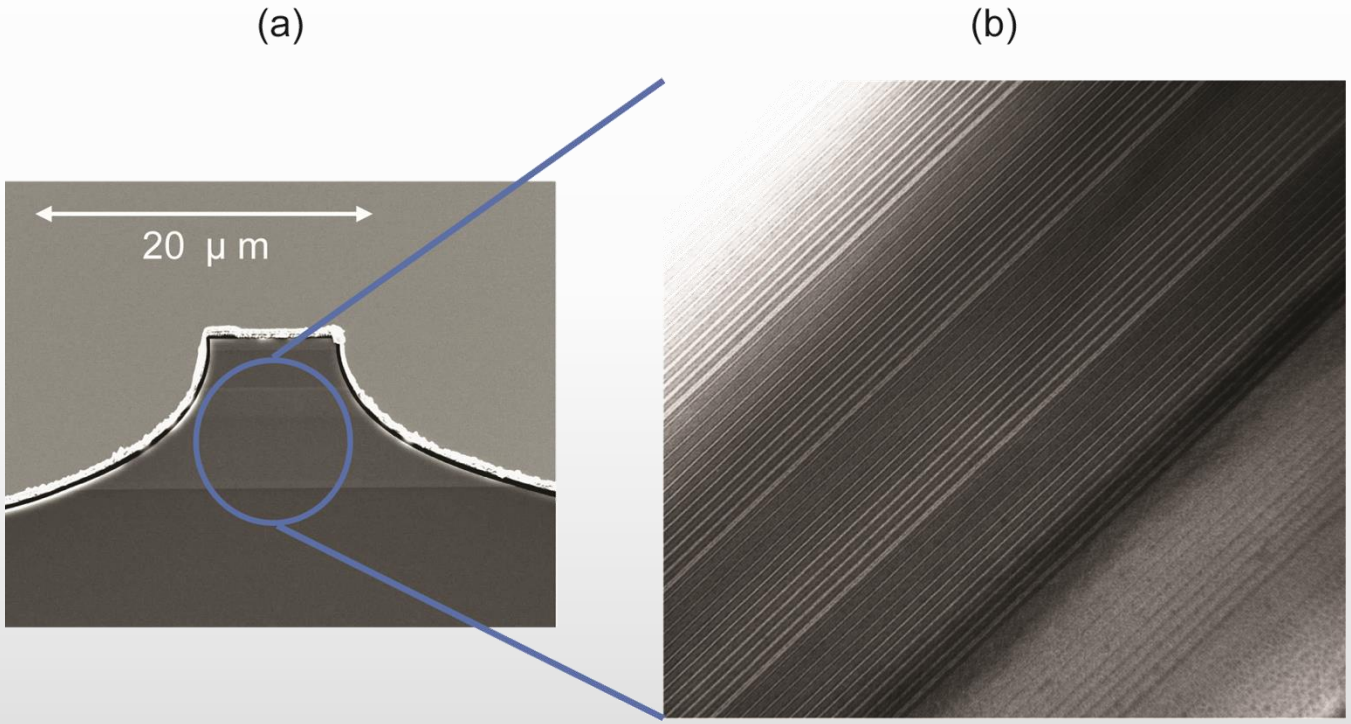


Fig 2. Image of a single quantum cascade laser, (a), highlighting the active region of the structure, (b).

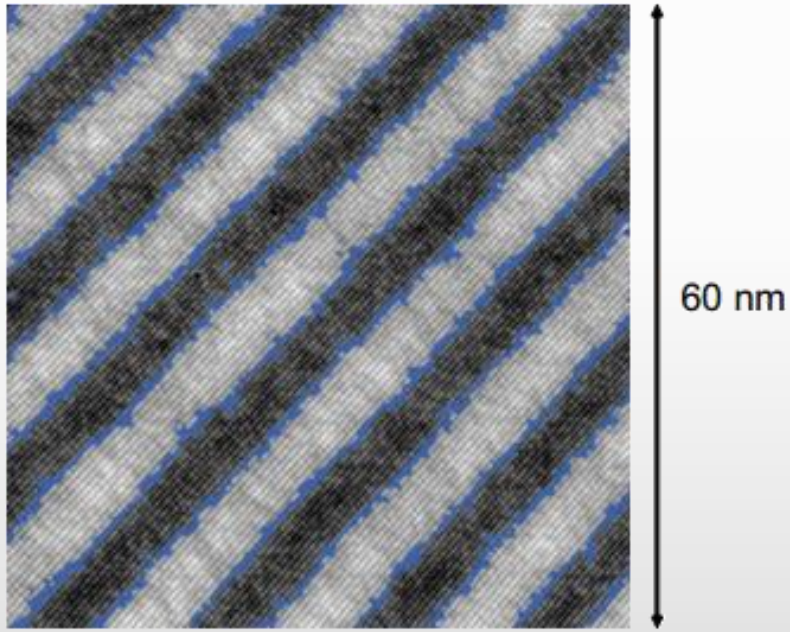
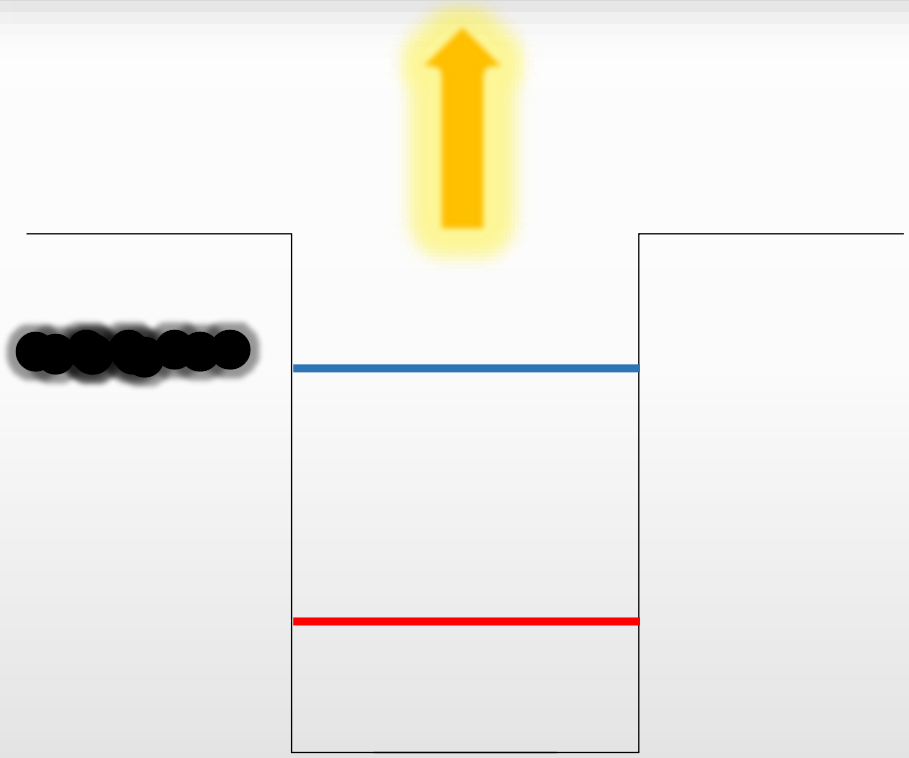
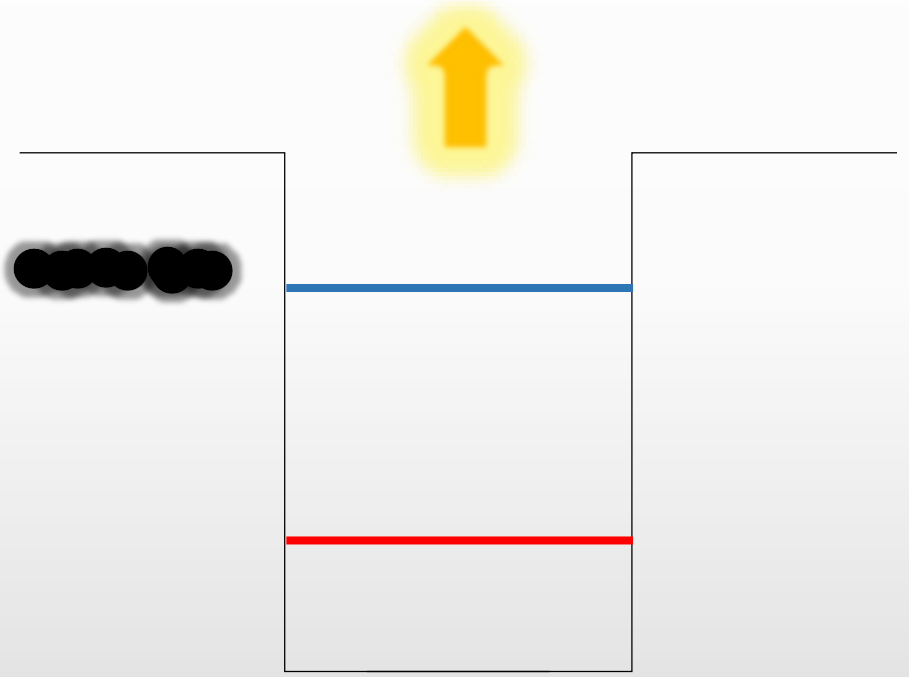


Fig 3. Magnified image of the active core, highlighting the interface roughness

"Interface Roughness Scattering"



Expectations



Reality

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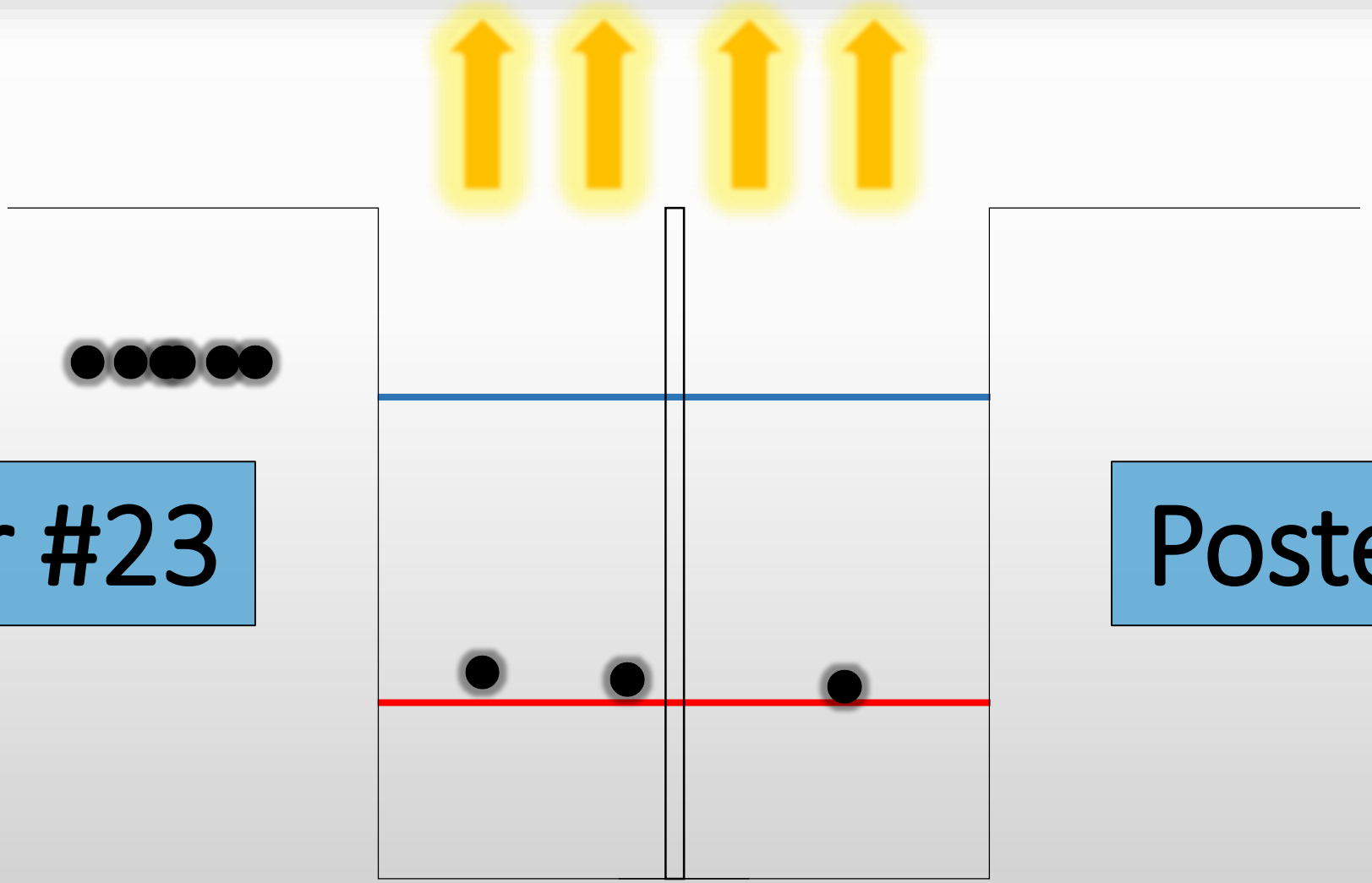
"Additional Interface"



Poster #23

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