

A large, faint, abstract network graph composed of numerous small blue dots connected by thin lines, forming a complex web-like pattern across the entire slide.

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With passion.

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Master Thesis Introduction

Detecting and Removing Surgical Smoke in Endoscopic imaging

Improving Image Quality for laparoscopic surgeries

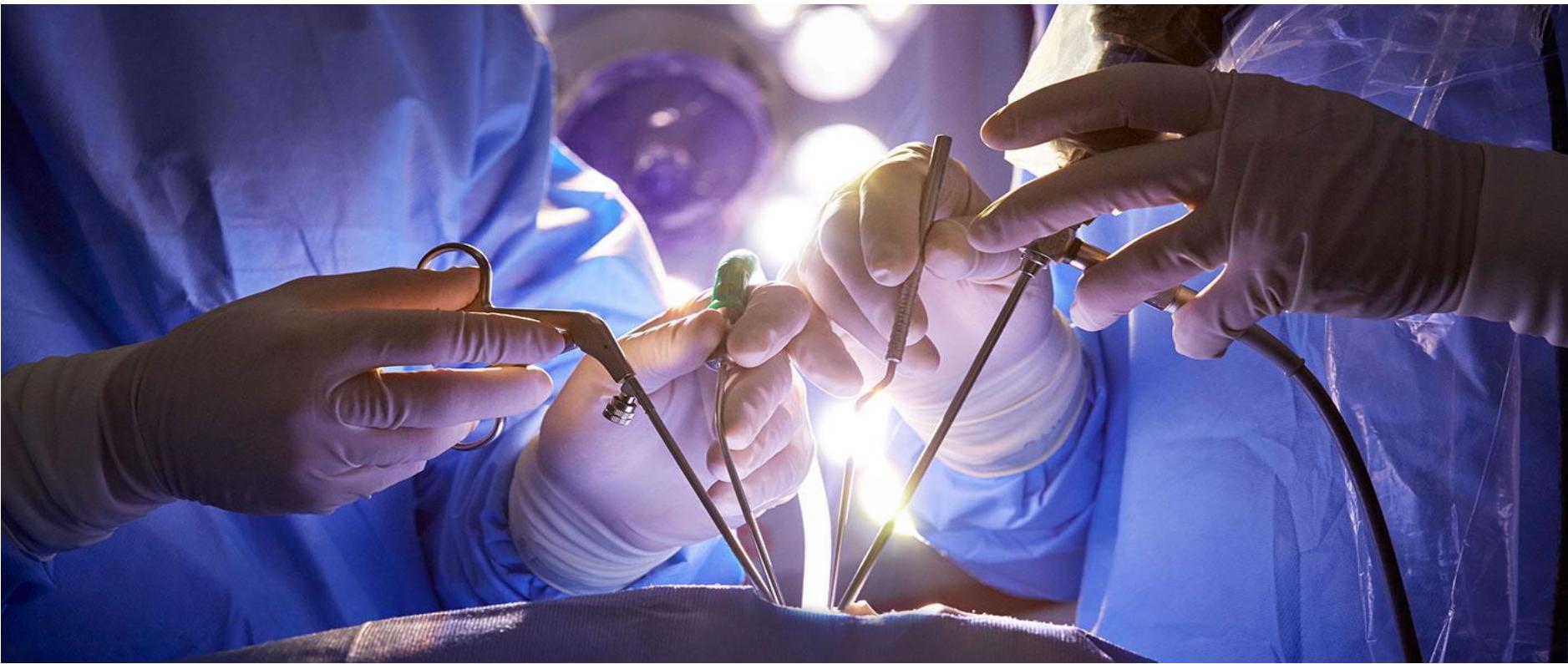
12. October 2018

Problem

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Endoscopes

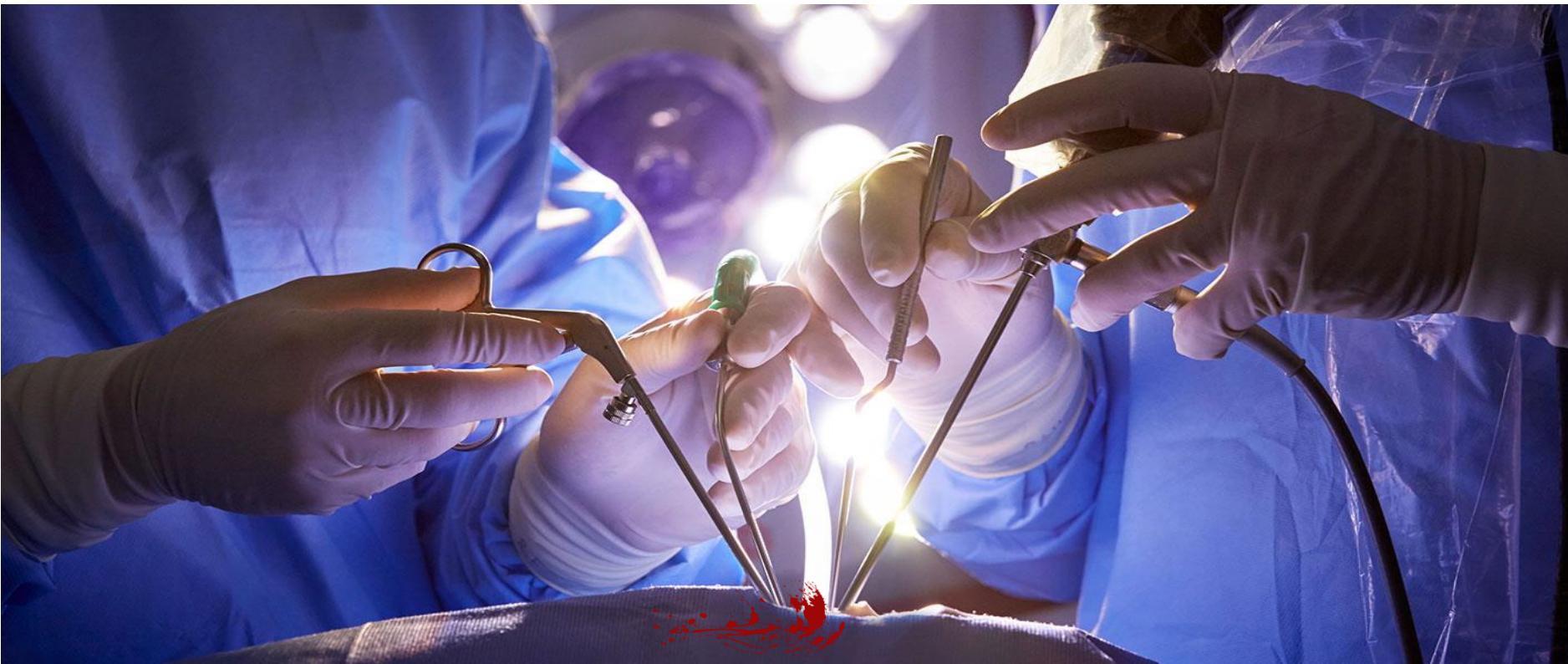


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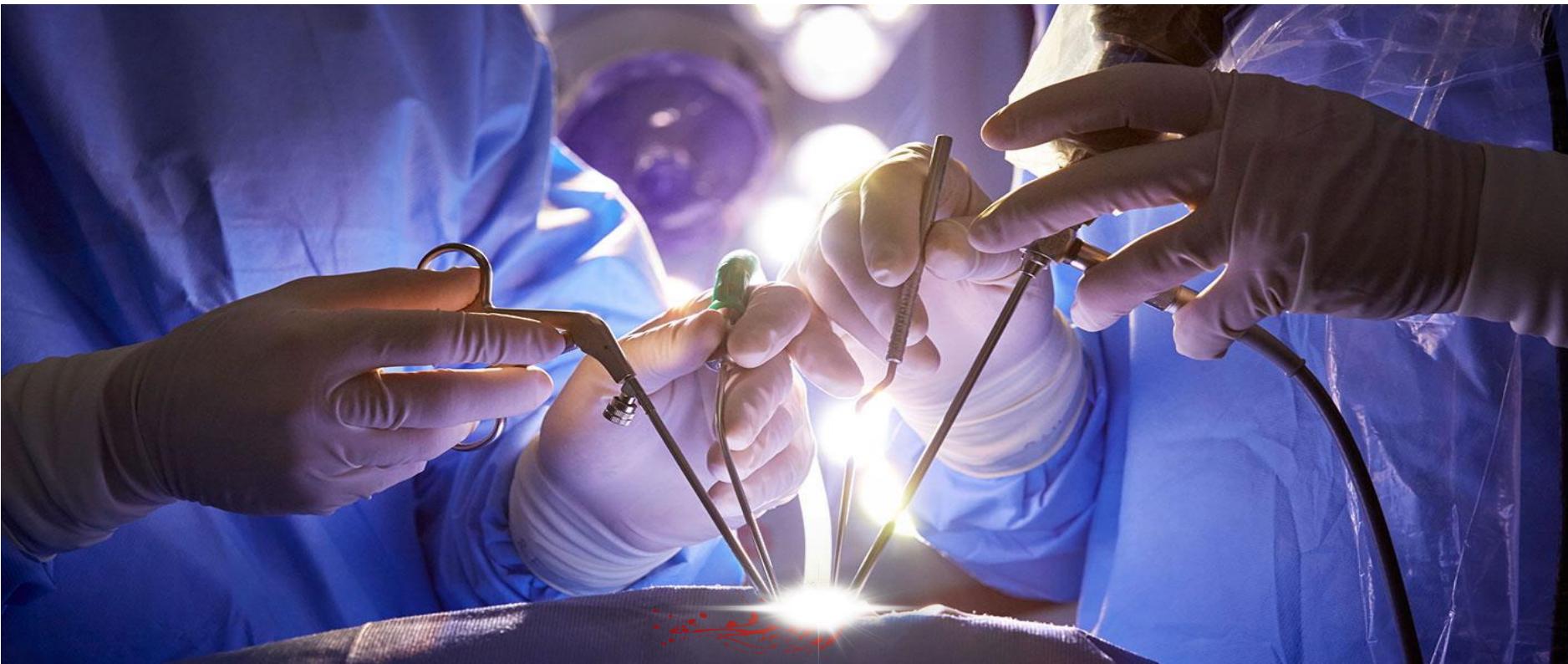


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Electocauters

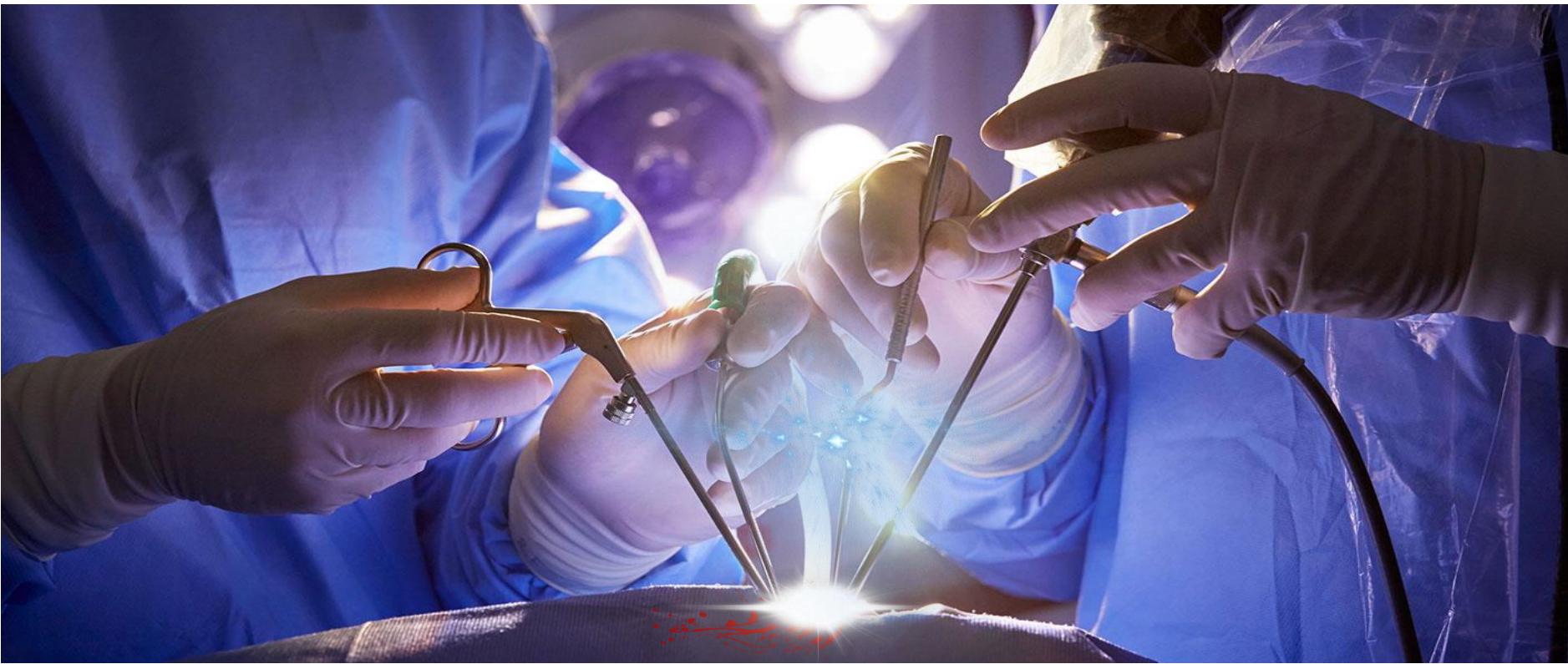


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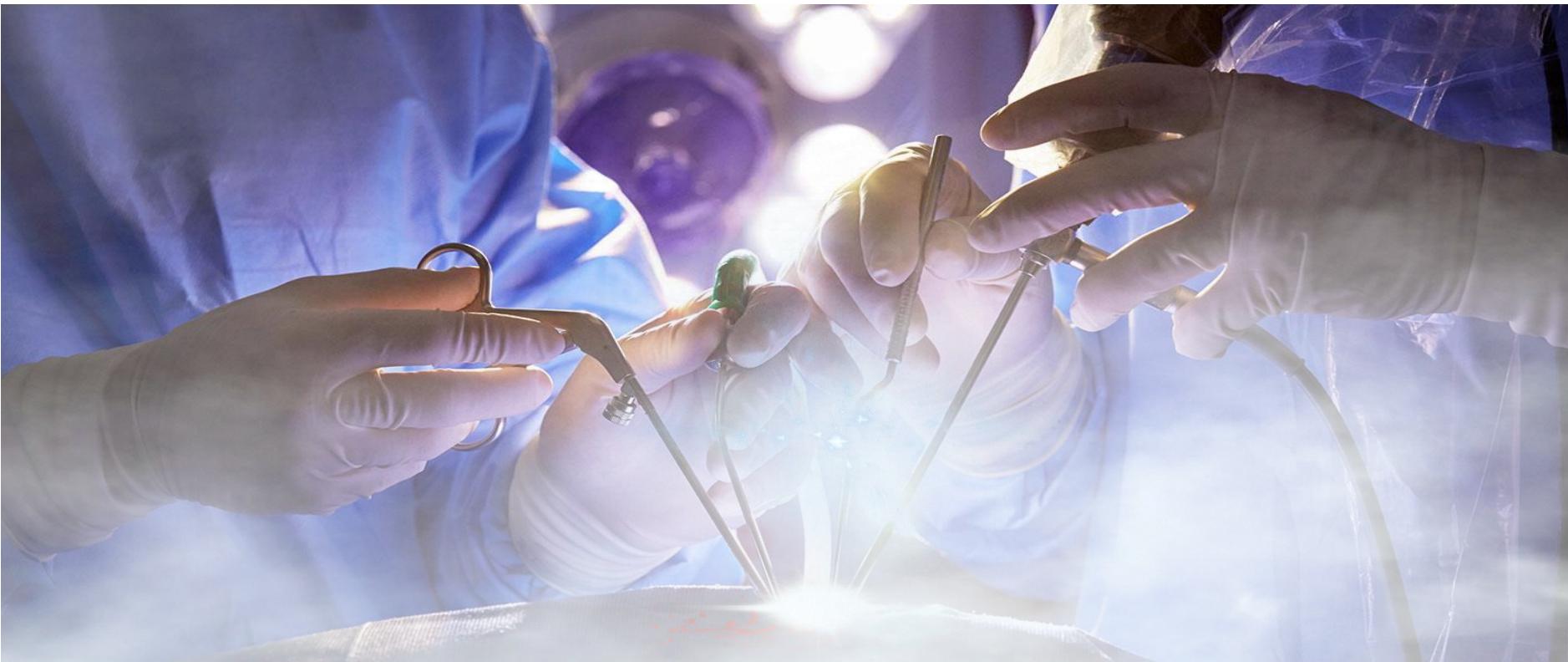


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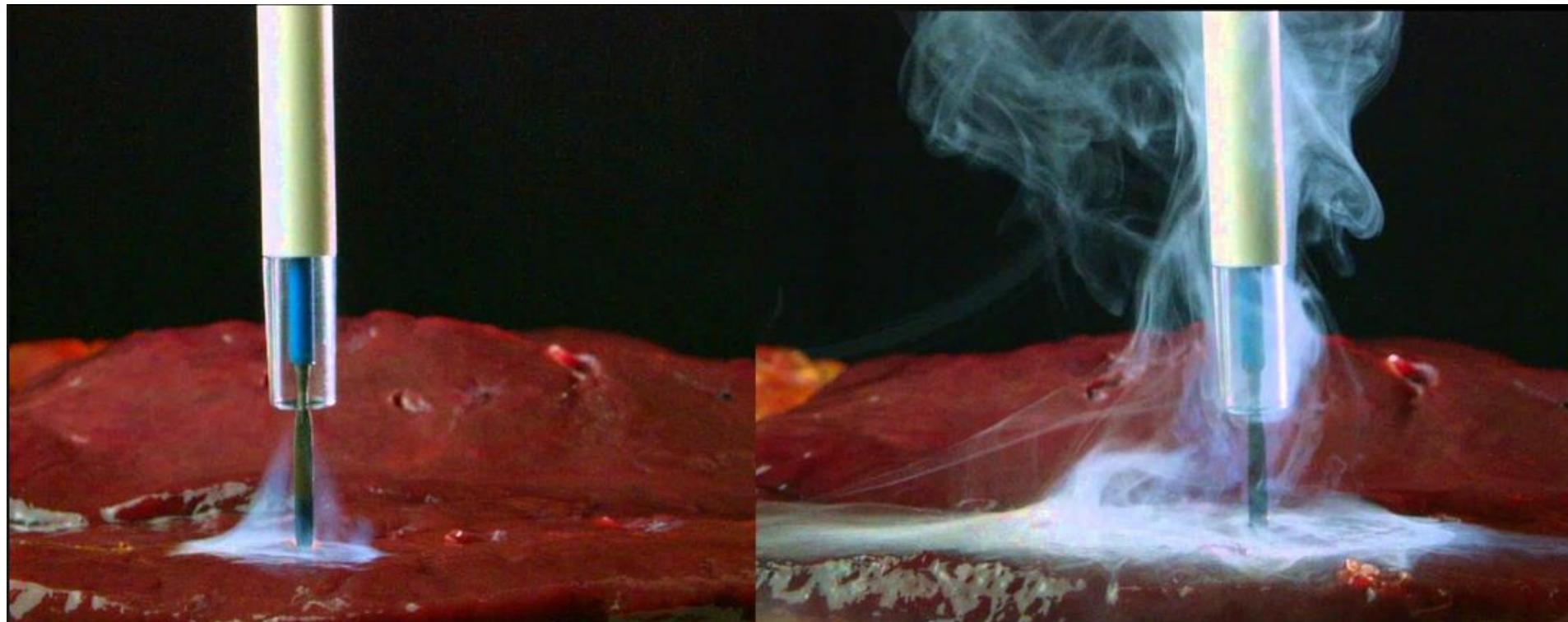


State of the Art

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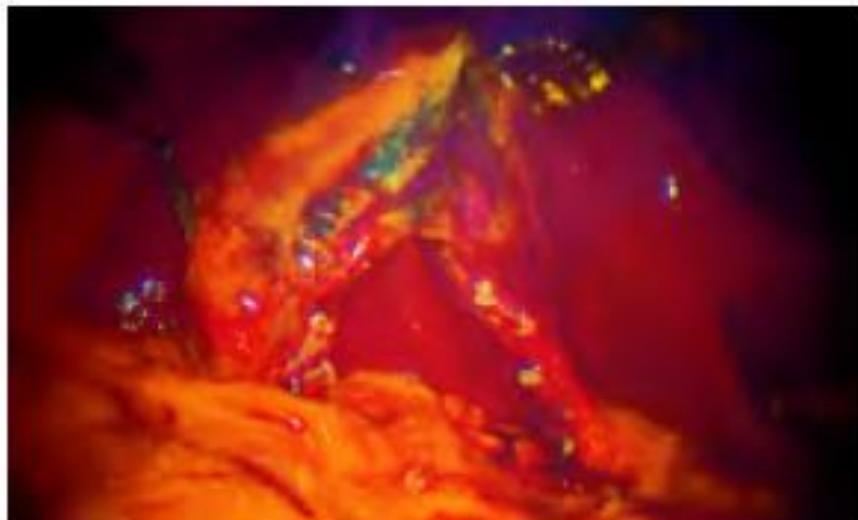
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Contrast enhancement



F904_0817

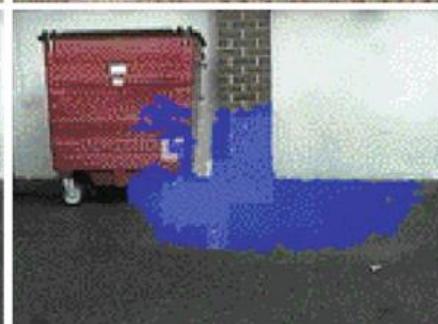
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Smoke Detection



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Dark Channel Prior



(a)



(b)



(c)

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Median Stacking



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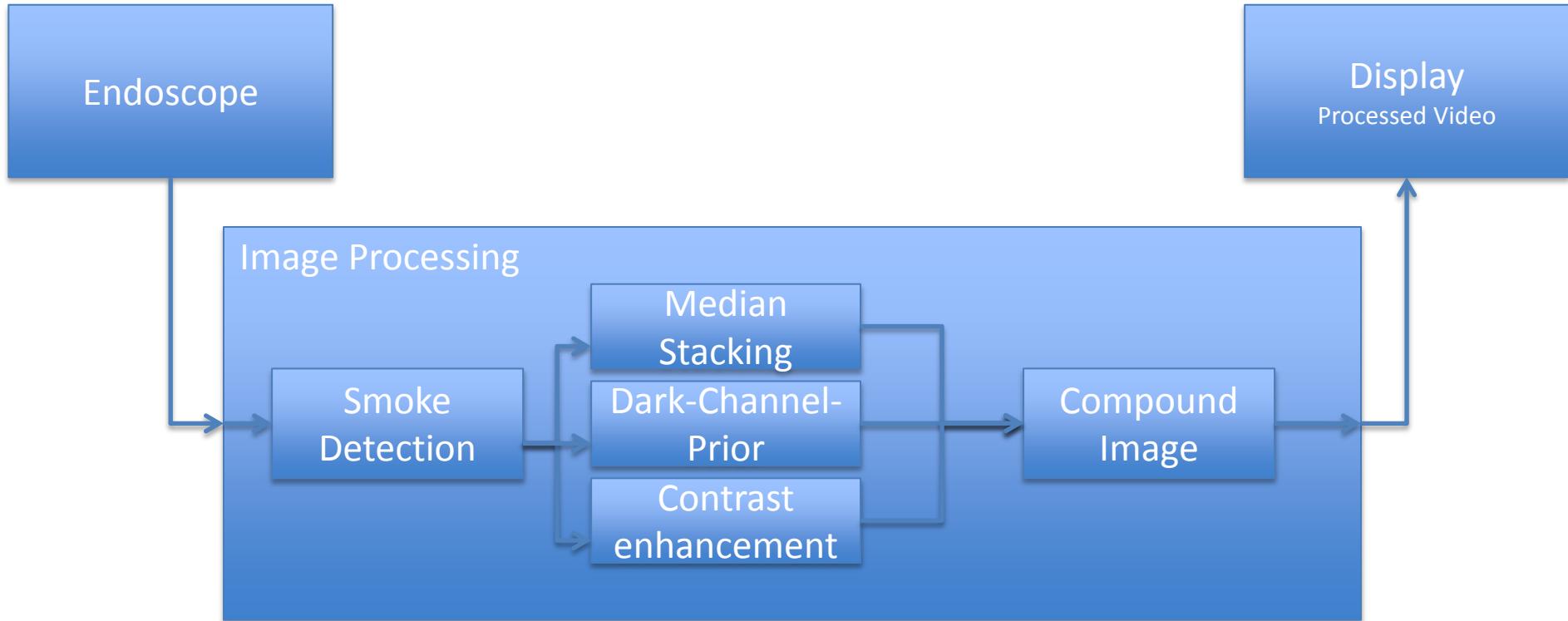
Model Based Enhancement



Original

Dehazed

Relighted

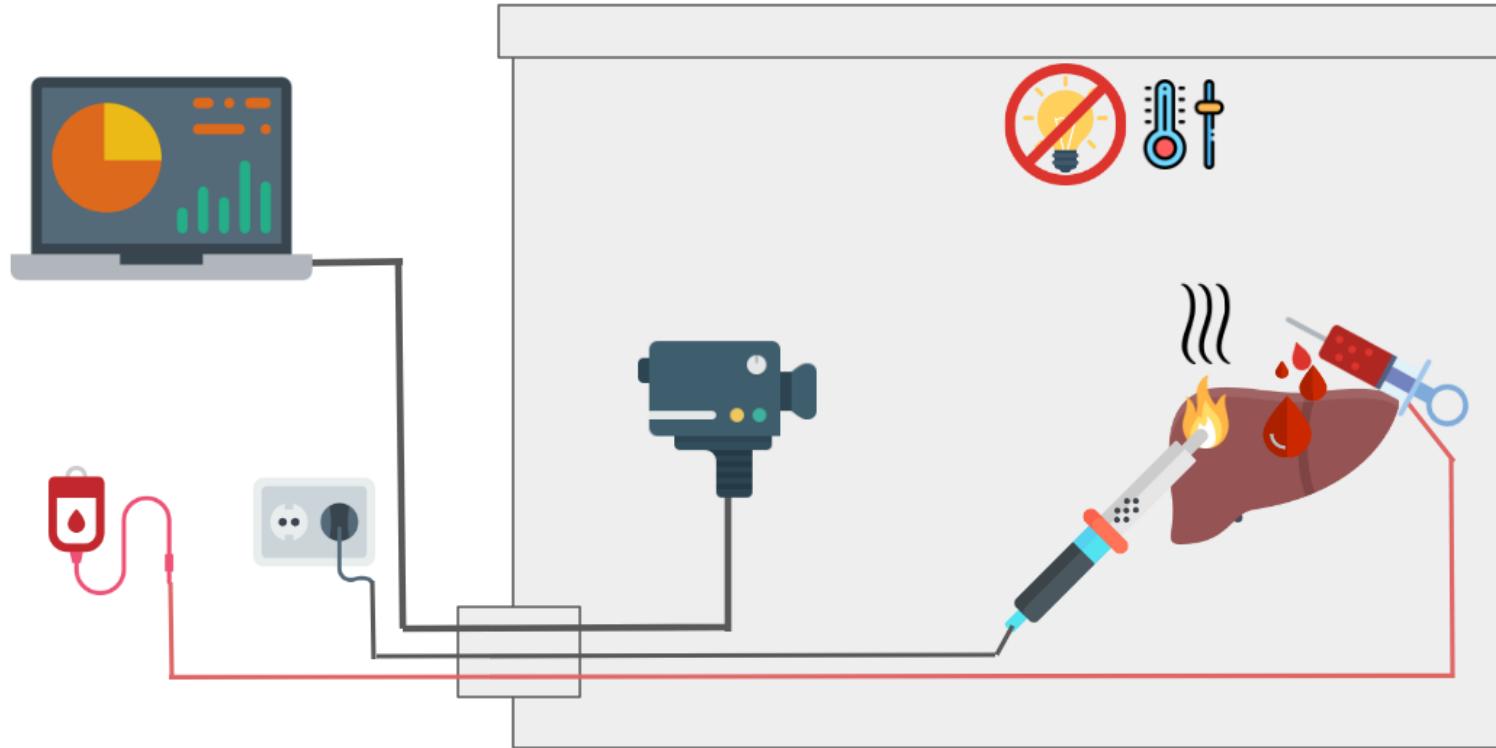


Test Data

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A surgeon wearing blue surgical scrubs and a mask is performing a procedure. They are holding a long, thin surgical instrument with a curved tip. The background is blurred, showing other medical staff and bright lights in an operating room. A large blue rectangular overlay covers the bottom half of the image, containing the text "Thank you! For your Attention".

Thank you!
For your Attention