

Electromagnetic Fields

Applications

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**Fabrizio Frezza, PhD,
Full Professor of Electromagnetic Fields**

- Advanced Electromagnetics and Scattering (6 ECTS)
(M.Sc. Electronics Engineering and M.Sc. Atmospheric Science and Technology)
- Artificial Materials, Metamaterials and Plasmonics for Electromagnetic Applications (6 ECTS)
(M.Sc. Nanotechnology Engineering)
- Microwaves, Part II (3 ECTS)
(M.Sc. Electronics Engineering)
- Basic Electromagnetic Fields (9 ECTS)
B.Sc. Information Engineering, at Latina
- Department of Information Engineering, Electronics and Telecommunications (DIET) Laboratory
of Electromagnetic Fields 2 (LabCEm2)



Links

Skype: fabriziofrezza

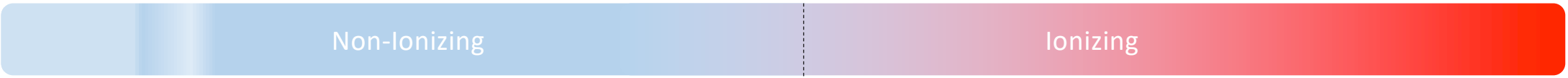
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bit.ly/FabrizioFrezzaPublications

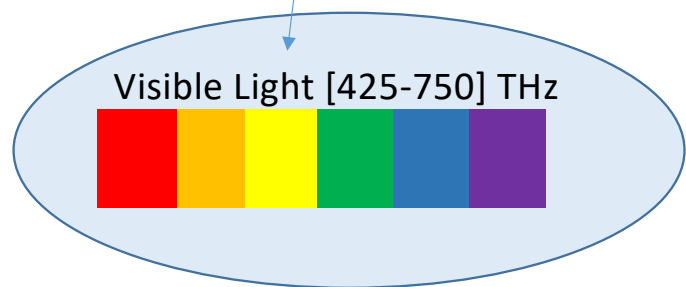
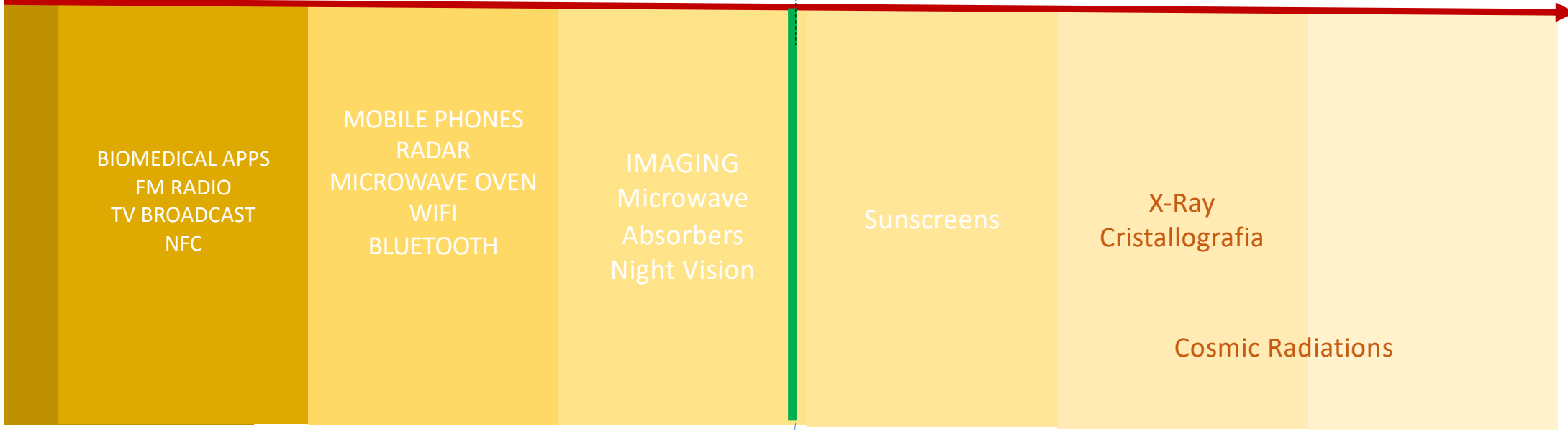
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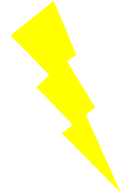


SAPIENZA
UNIVERSITÀ DI ROMA



1 MHz 1 GHz 1 THz 1 PHz 1 EHz 1 ZHz





Electricity



Thales of Miletus 600 BC



William Gilbert 1600

Michael Faraday



Joseph Henry



James Clerk Maxwell



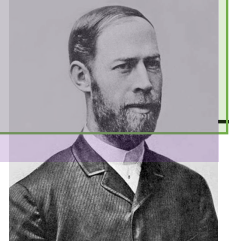
Magnetism



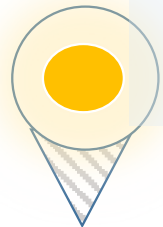
Archimedes 200 BC



William Gilbert 1600

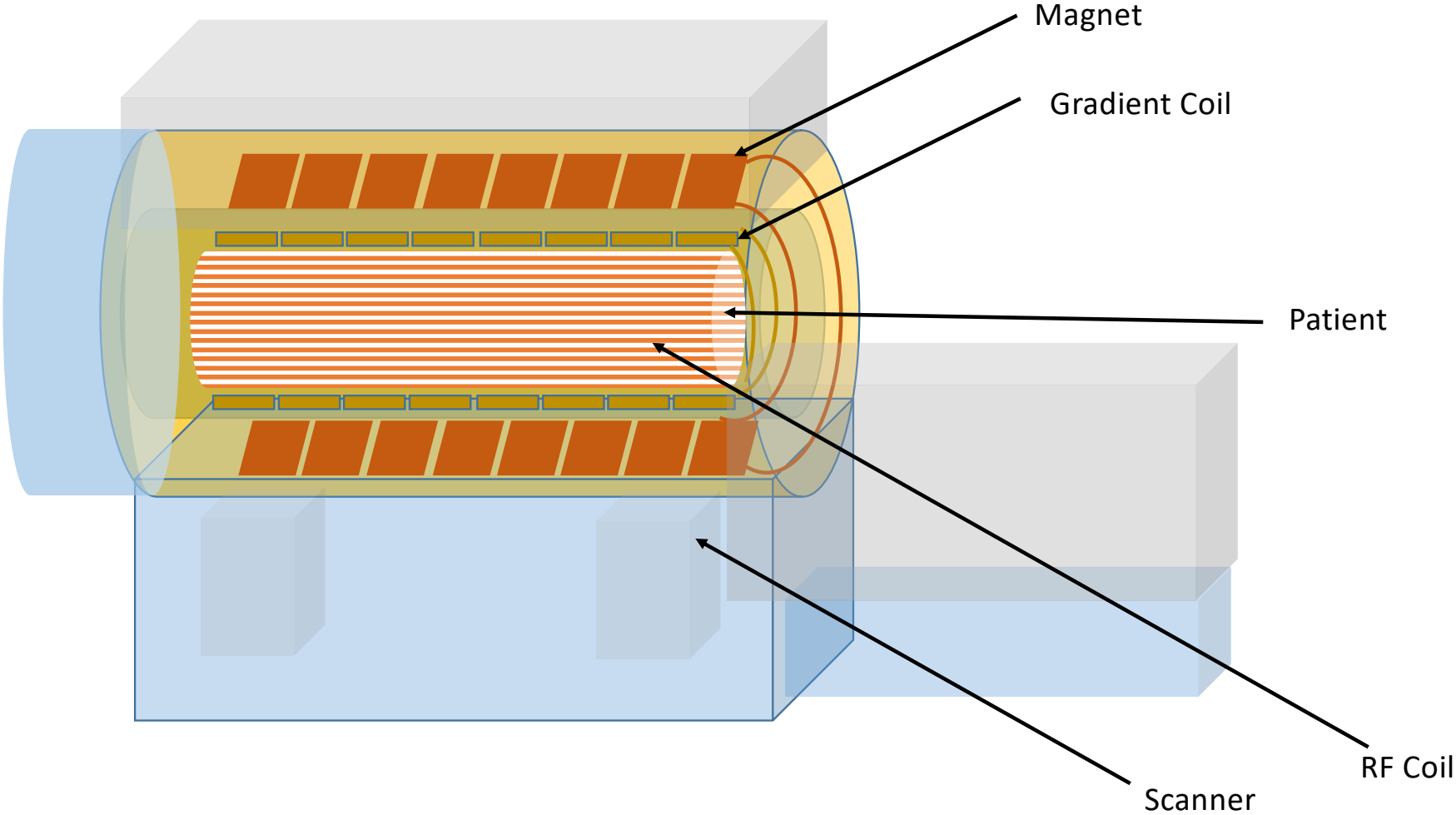


Heinrich Rudolf Hertz

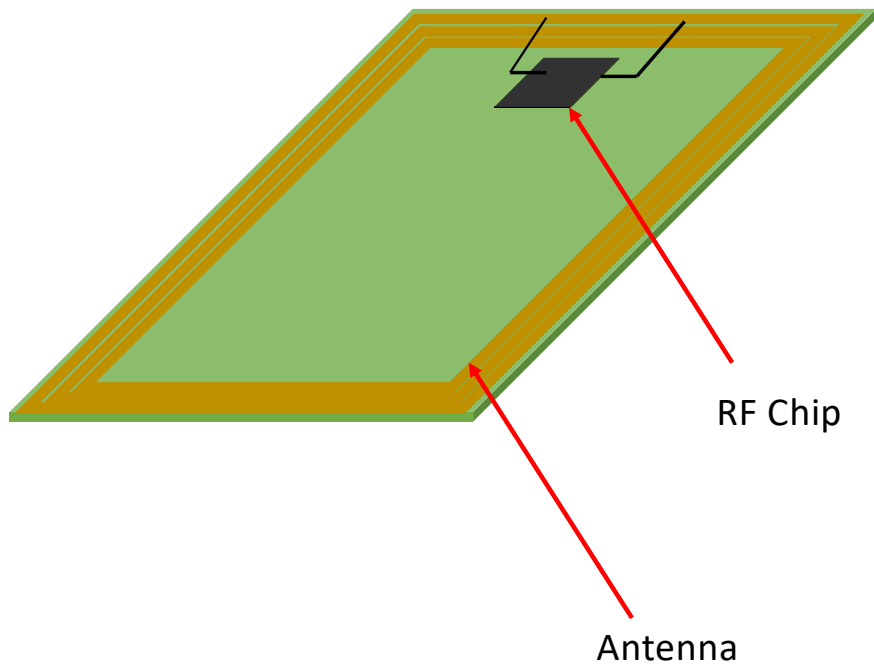


Light

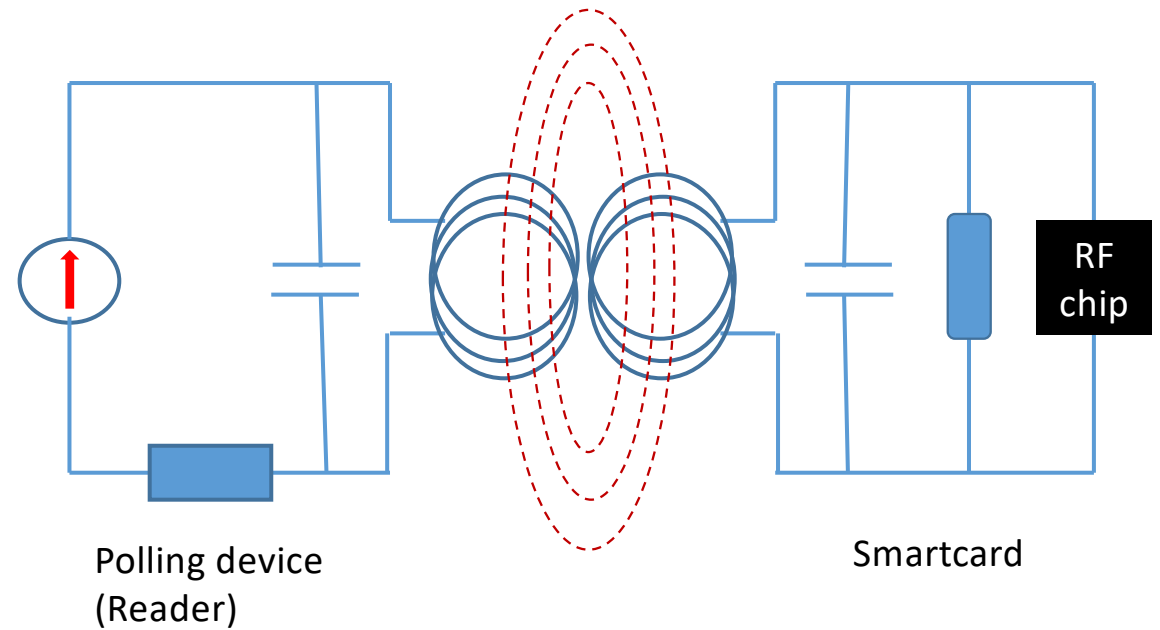
MRI (Magnetic Resonance Imaging) SCAN



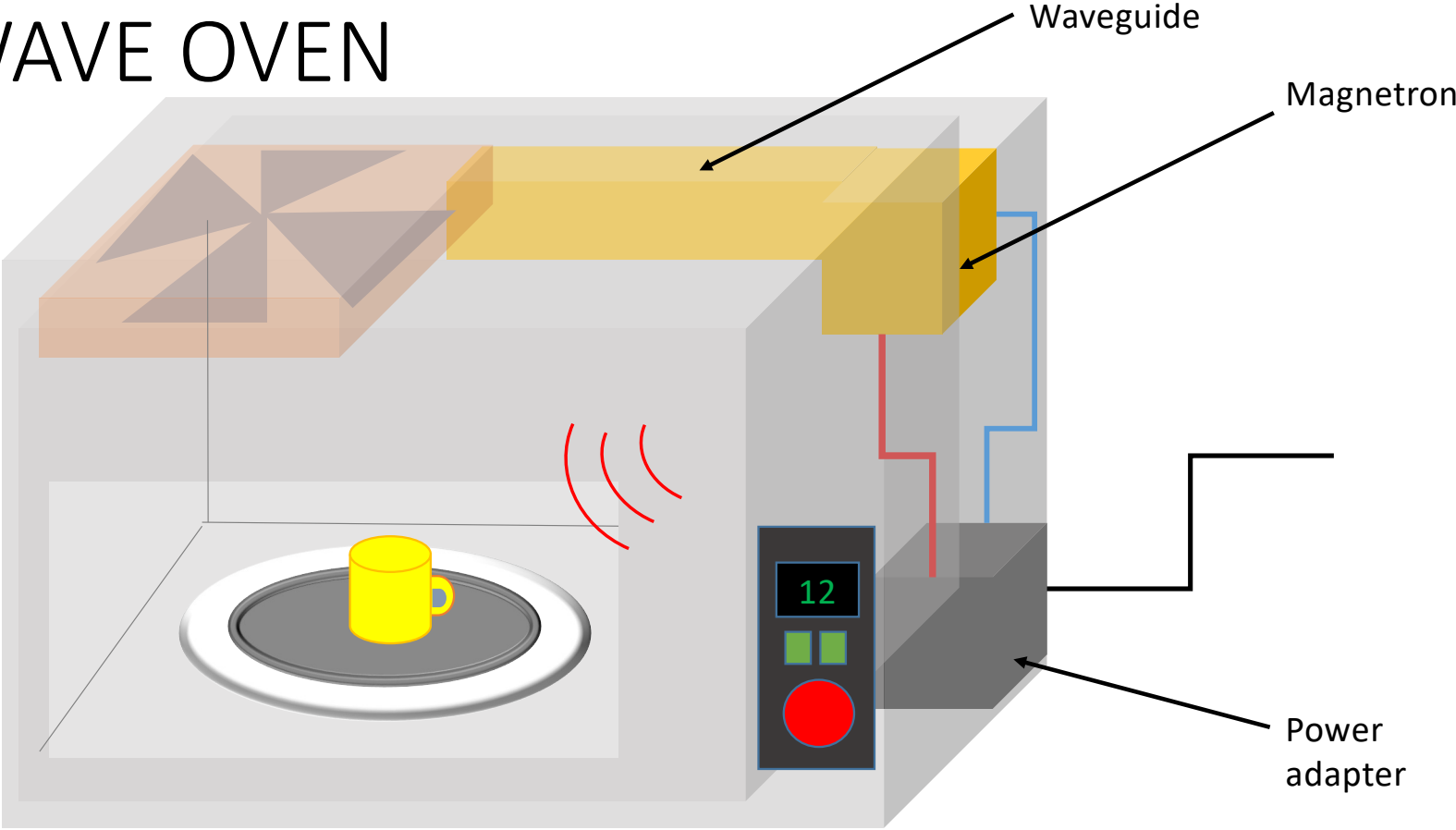
NFC (Near-Field Communication)



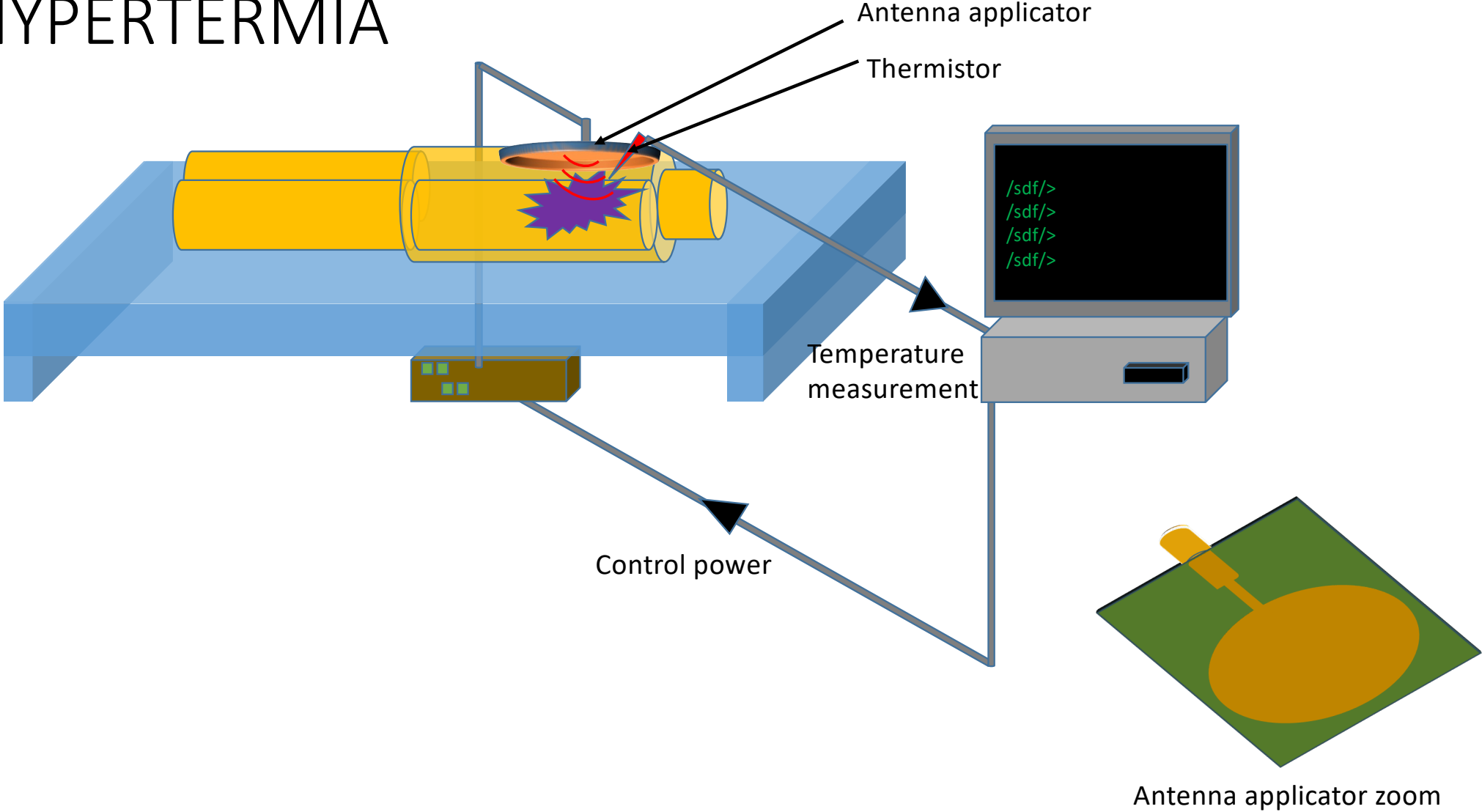
Tapping working principle



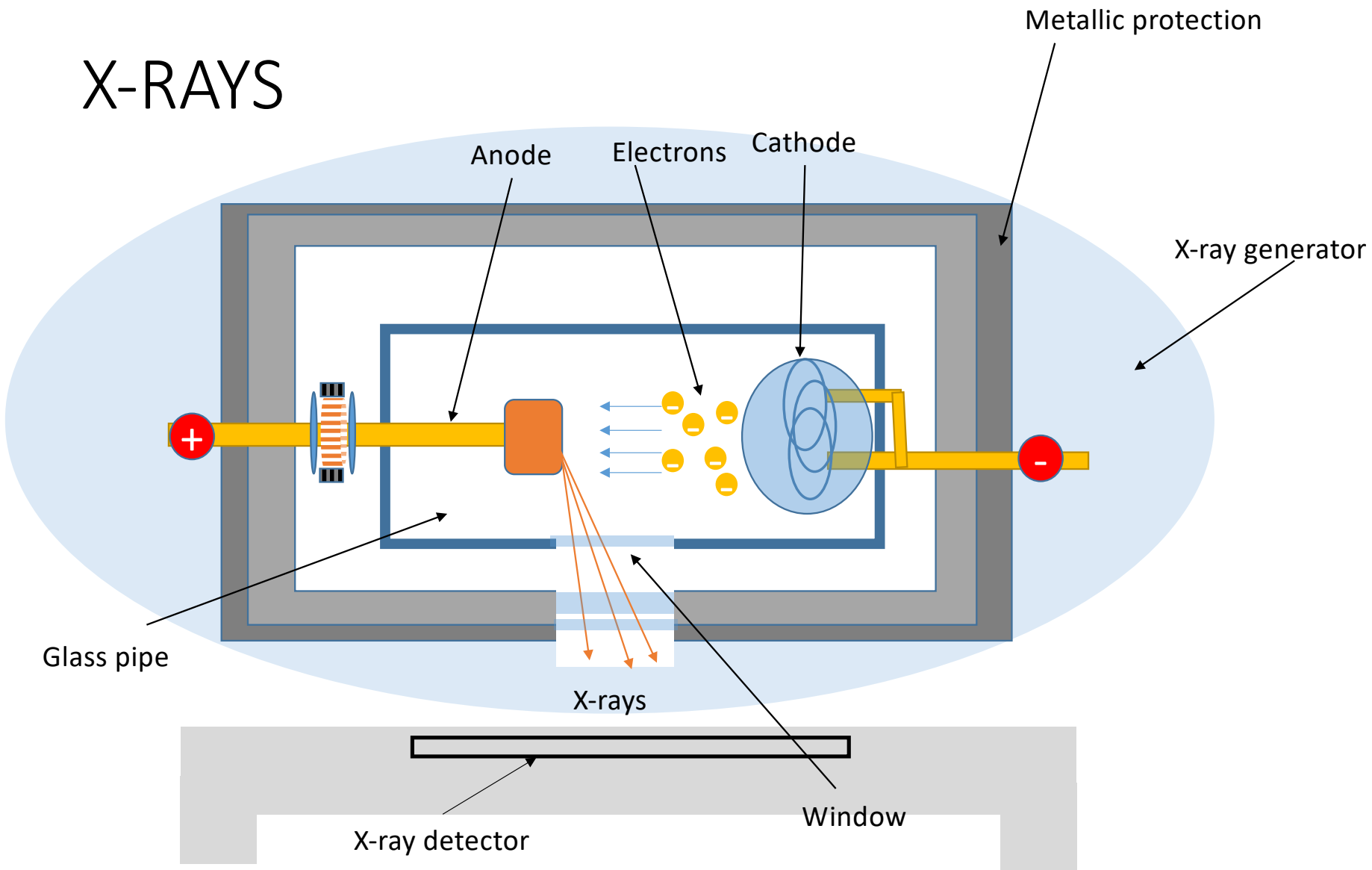
MICROWAVE OVEN



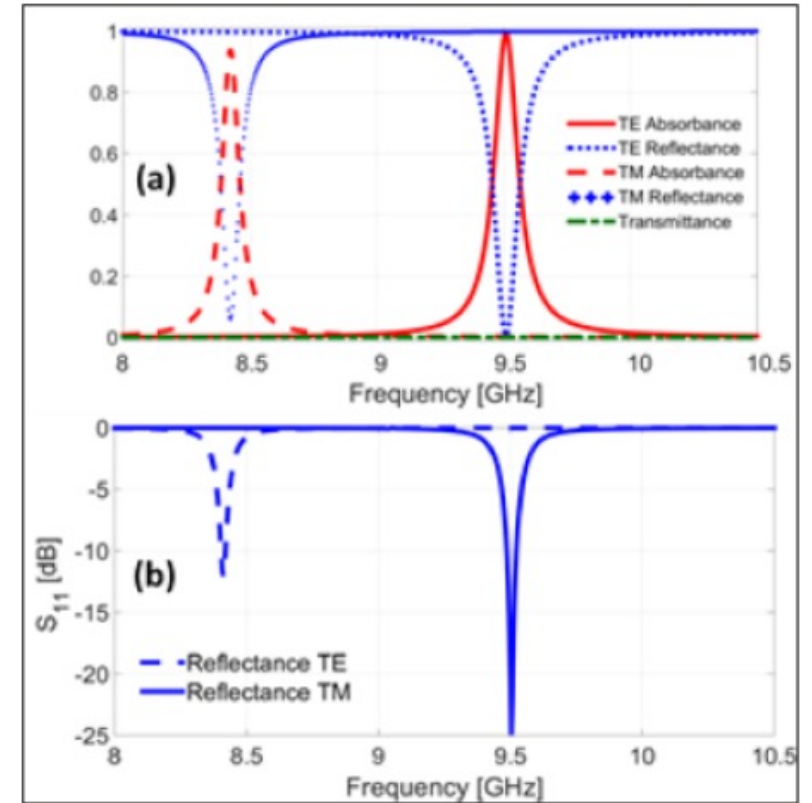
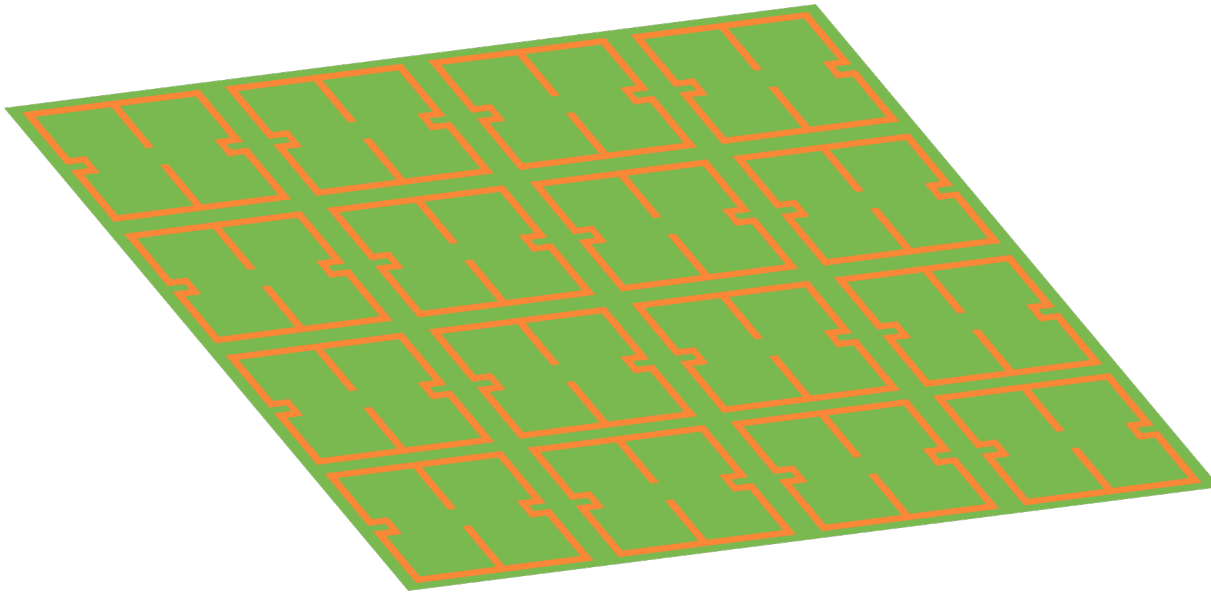
HYPERTERMIA



X-RAYS

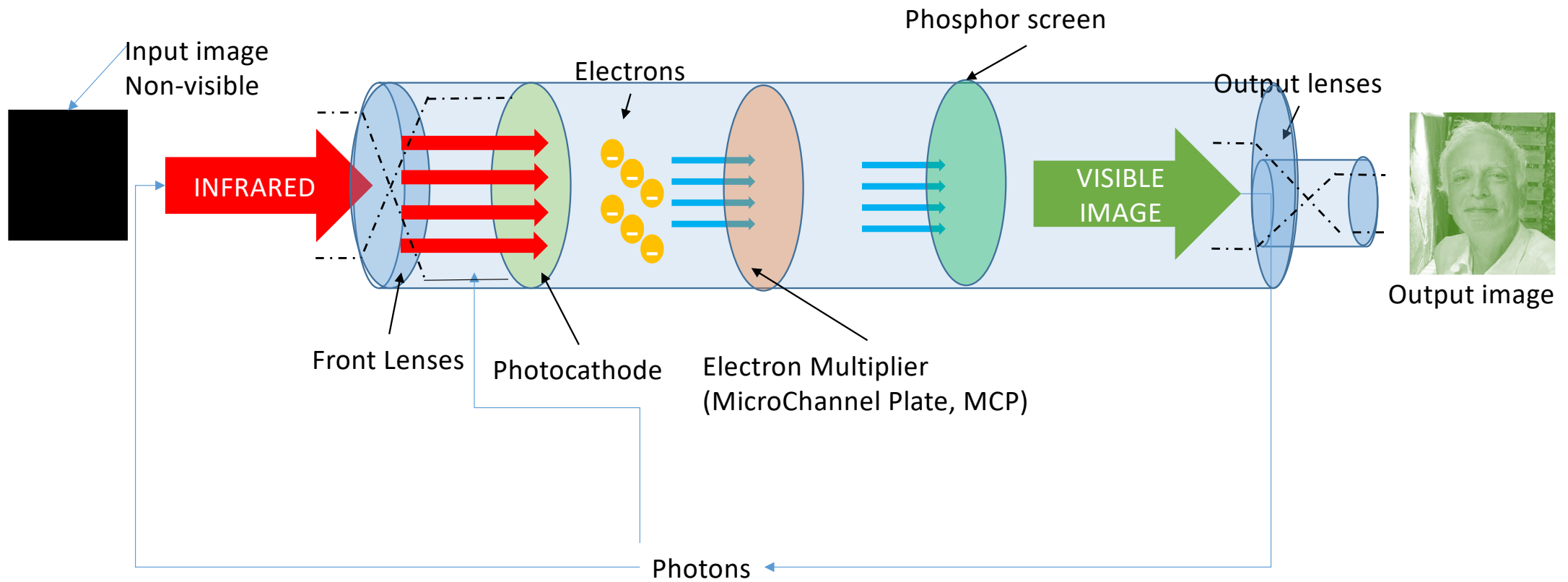


FSS (Frequency-Selective Surfaces)

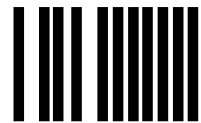
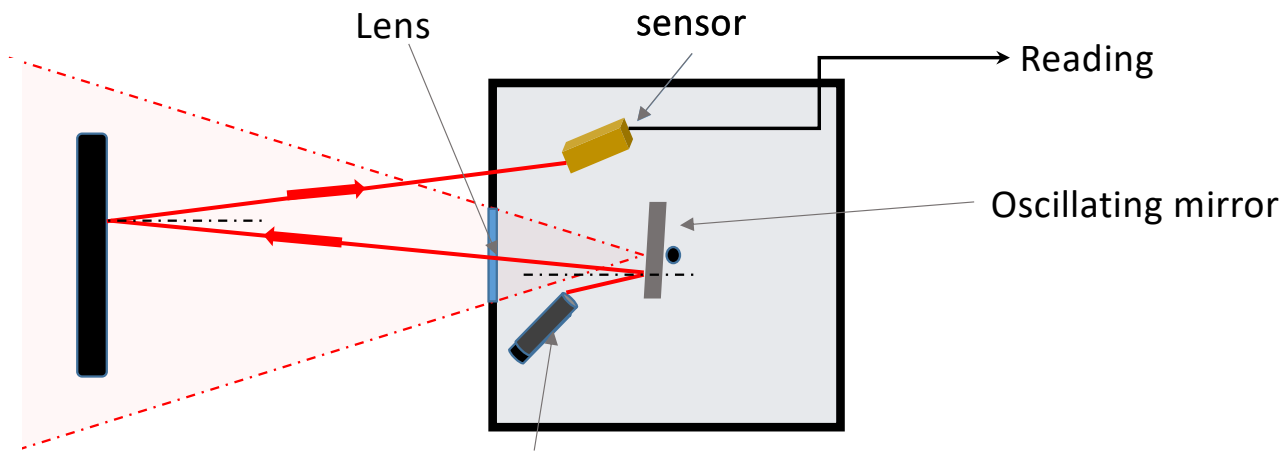


RIS (Reconfigurable Intelligent Surfaces)

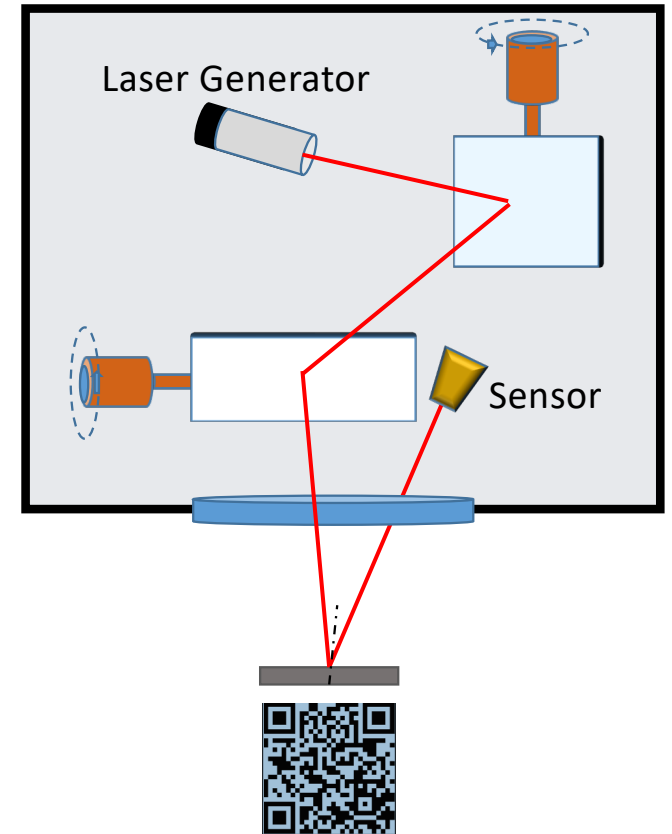
NIGHT VISION (INFRARED)



LASER BARCODE SCANNER



LINEAR BARCODE



2D BARCODE (e.g., QR-CODE)

PHOTOVOLTAIC CELL

