

WELCOME

SILICON PHOTONICS

The background features a dark silhouette of a world map centered on the Atlantic Ocean. Below the map, there are several horizontal, wavy bands of orange and yellow light, creating a sense of motion or energy. Four circular icons are scattered across the map: one in the upper left with a diagonal arrow pointing up and to the right, and three in the lower right quadrant, each with a straight arrow pointing upwards.

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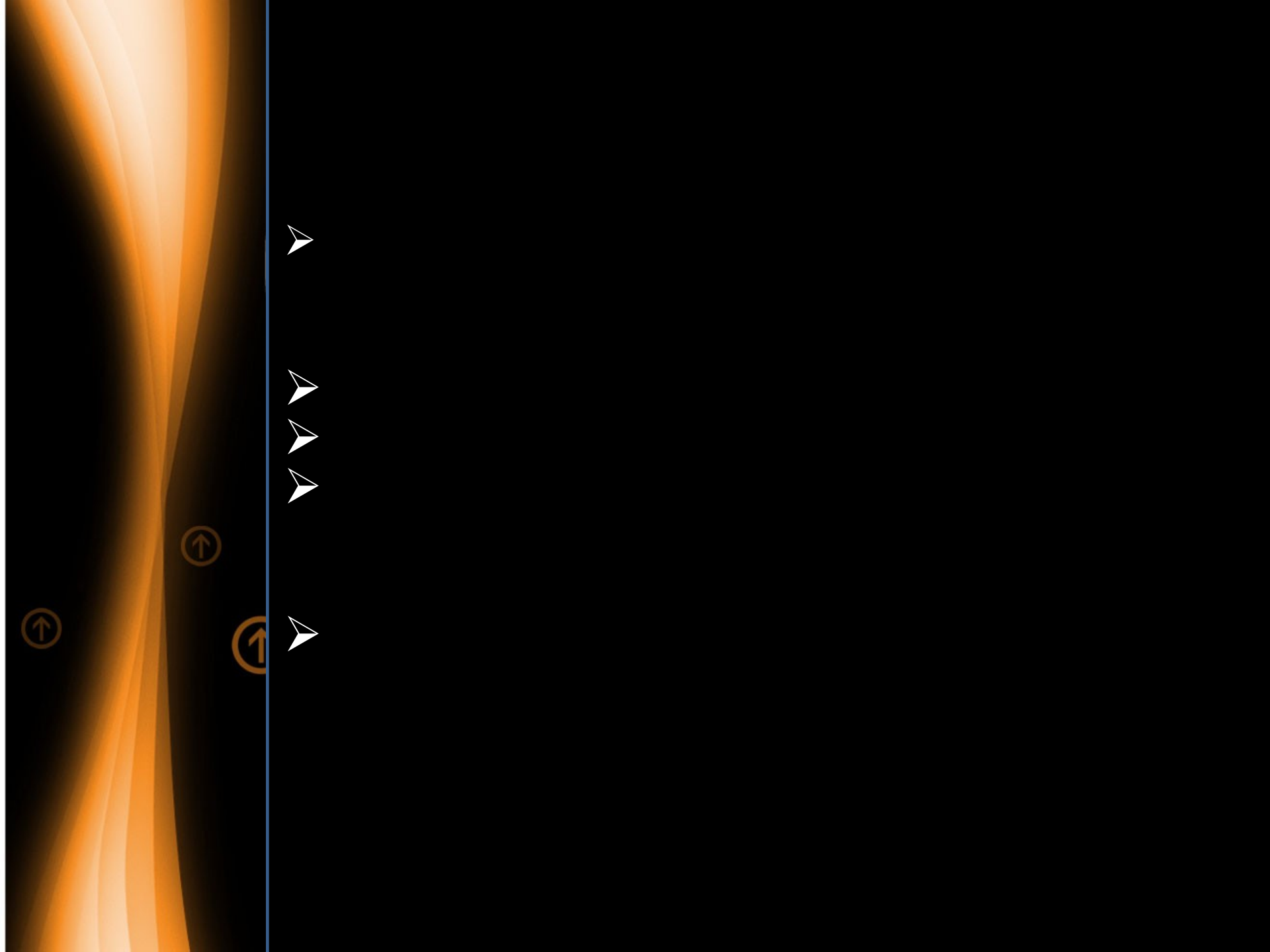
Introduction

Light

Photonics-Definition







HISTORY



SILICON PHOTONIC DEVICES



Used for automatic channel equalization in add/drop multiplexers.



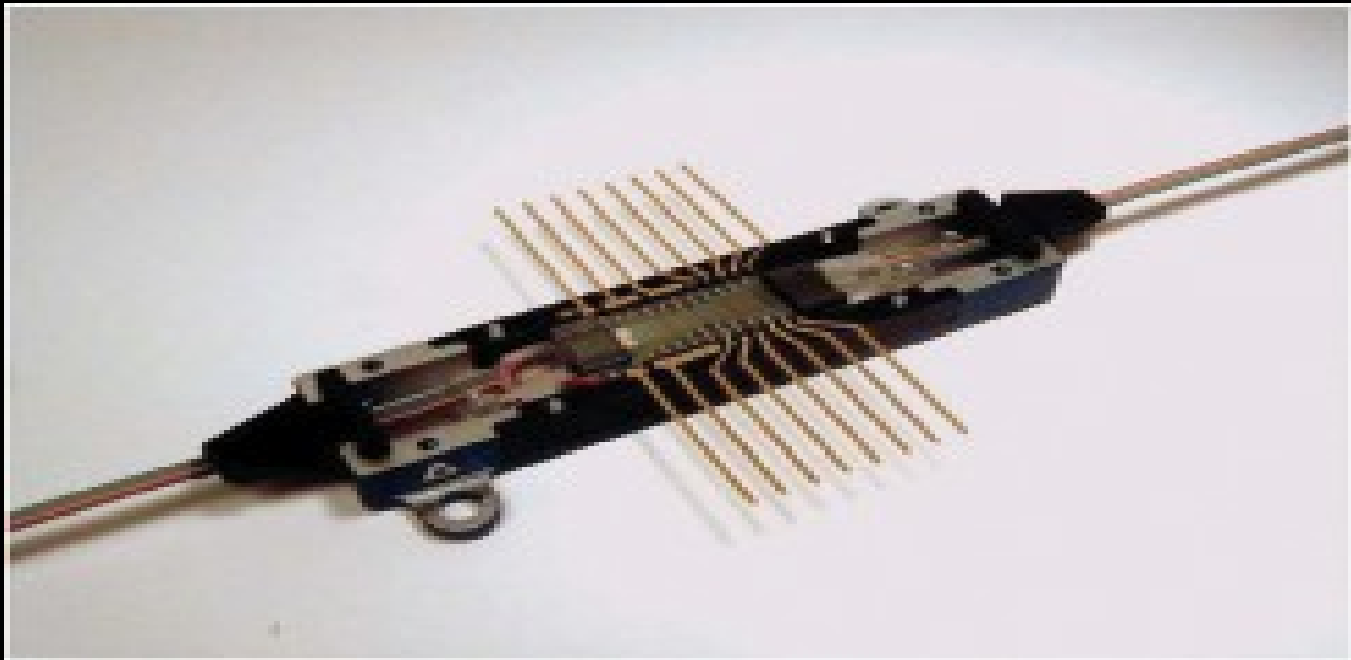
Monolithically integrates wavelength filters, photo detectors, electronic amplifiers, and drivers.



High data rate



Lab-on-a-chip



8 CHANNEL VOA

➤ Light Source

LED, LASER, CRT, Super Luminescent Diodes.

➤ Transmission

Glass fiber, Plastic optical fiber, Photonic crystal

➤ Amplification

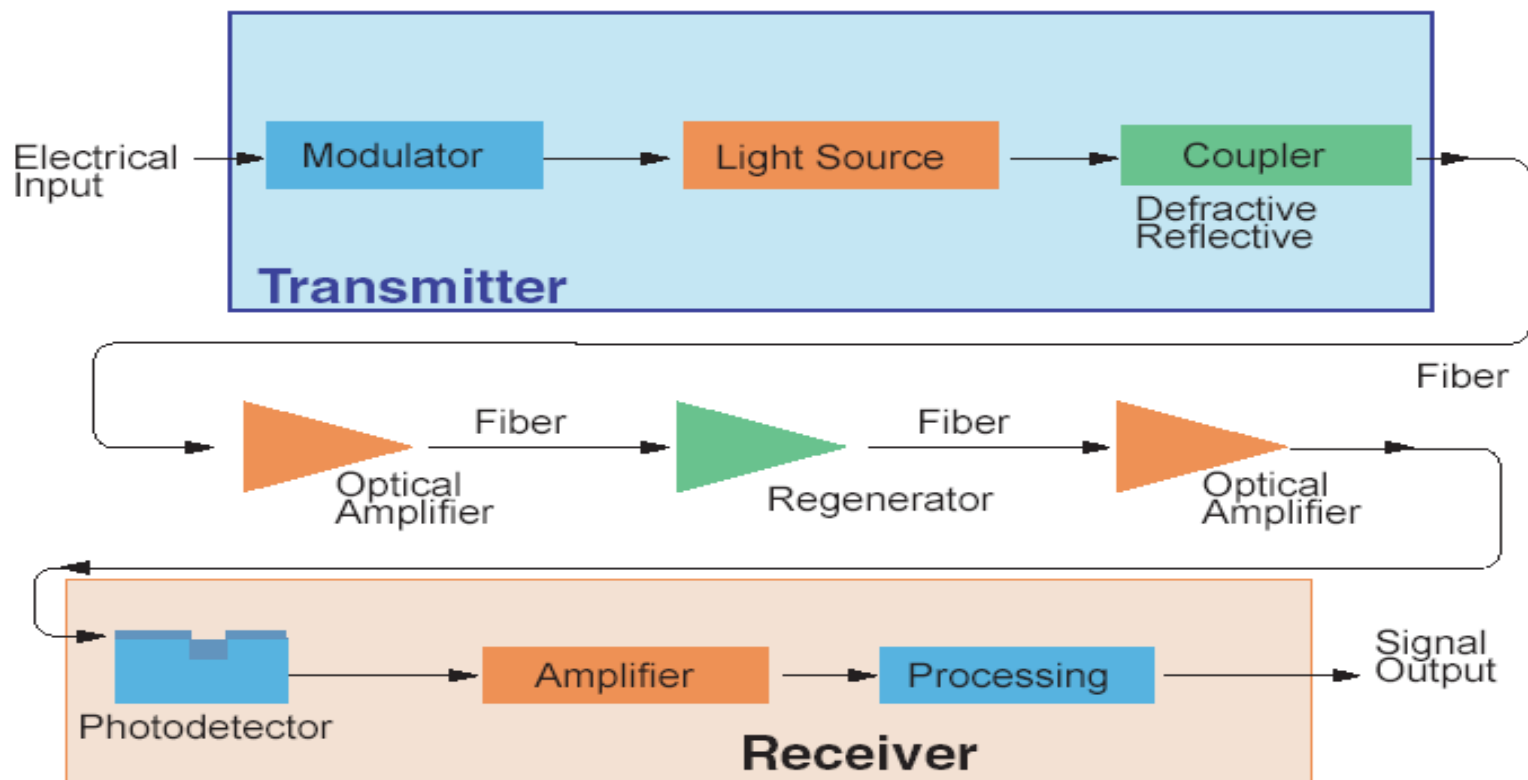
Erbium-doped fiber amplifiers, Quantum dot amplifiers

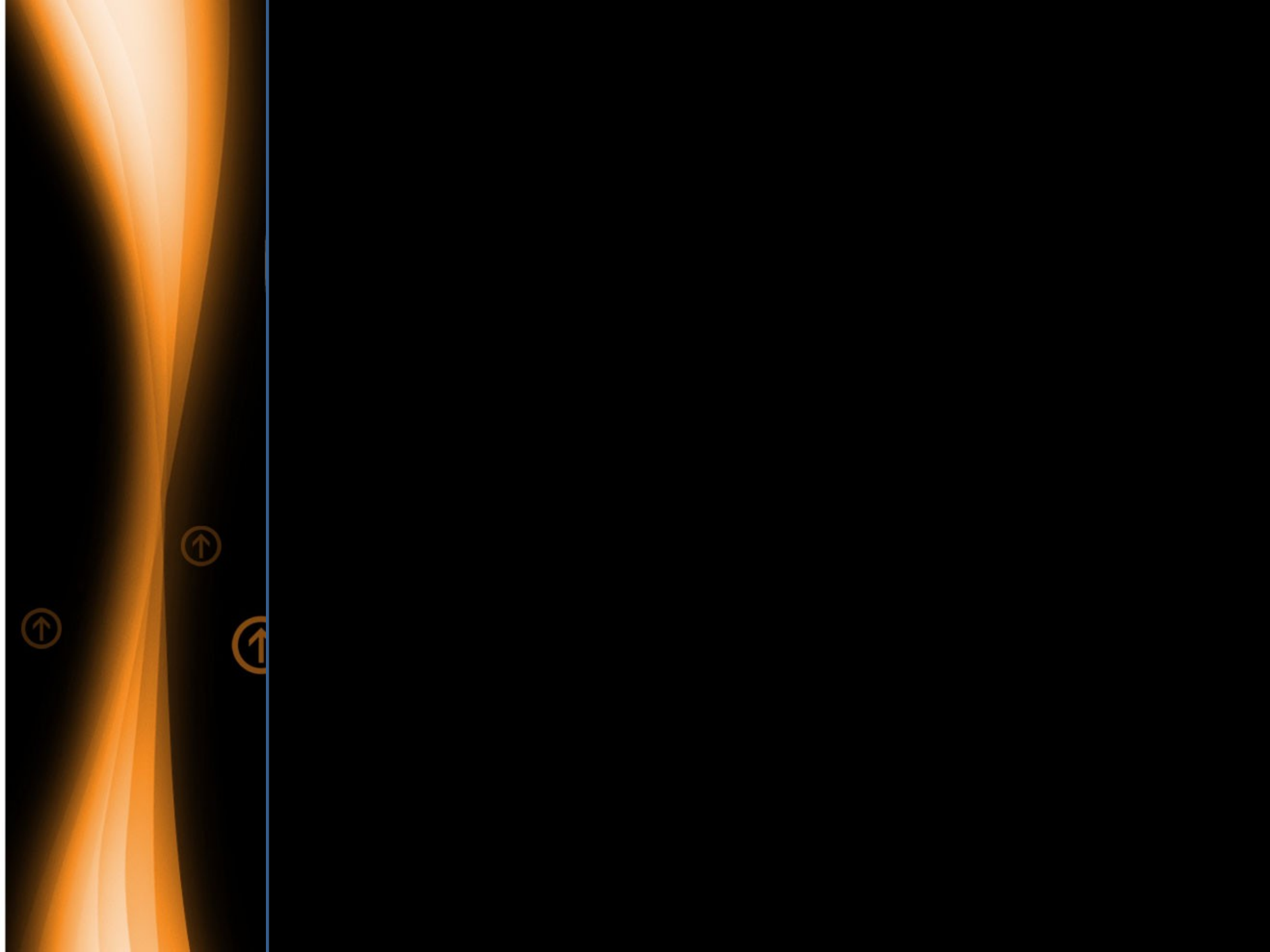
➤ Detection

Fast photodiodes, Charge Coupled Devices (CCDs)

➤ Modulation

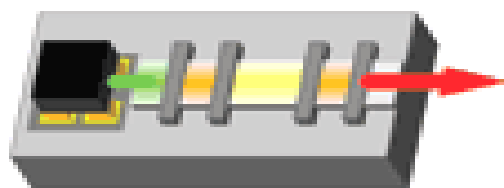
On-Off keying, Phase shift keying



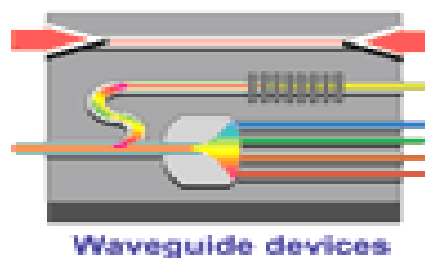




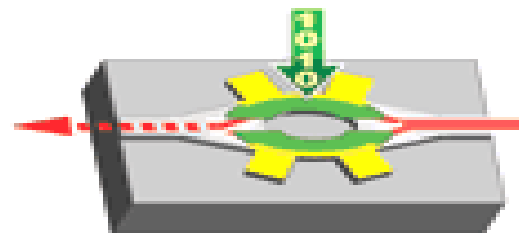
1) Light Source



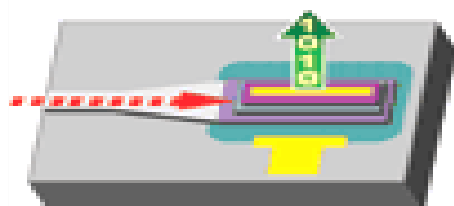
2) Guide Light



3) Modulation



4) Photo-detection



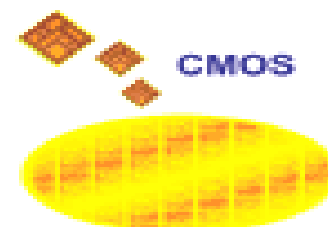
SiGe Photodetectors

5) Low Cost Assembly

Passive
Align



6) Intelligence



CMOS



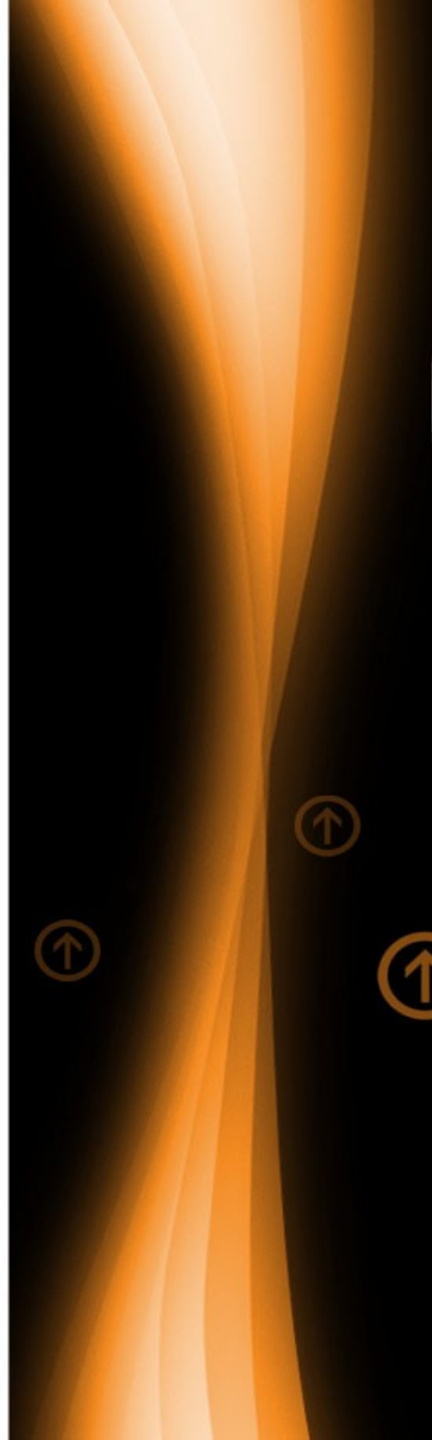
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➤ Heat dissipation



CONCLUSION

- It brings the benefits of CMOS to fiber-optic communication.
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- Optical communications and silicon photonic technology will allow enterprises to increase bandwidth availability .

THANK YOU