

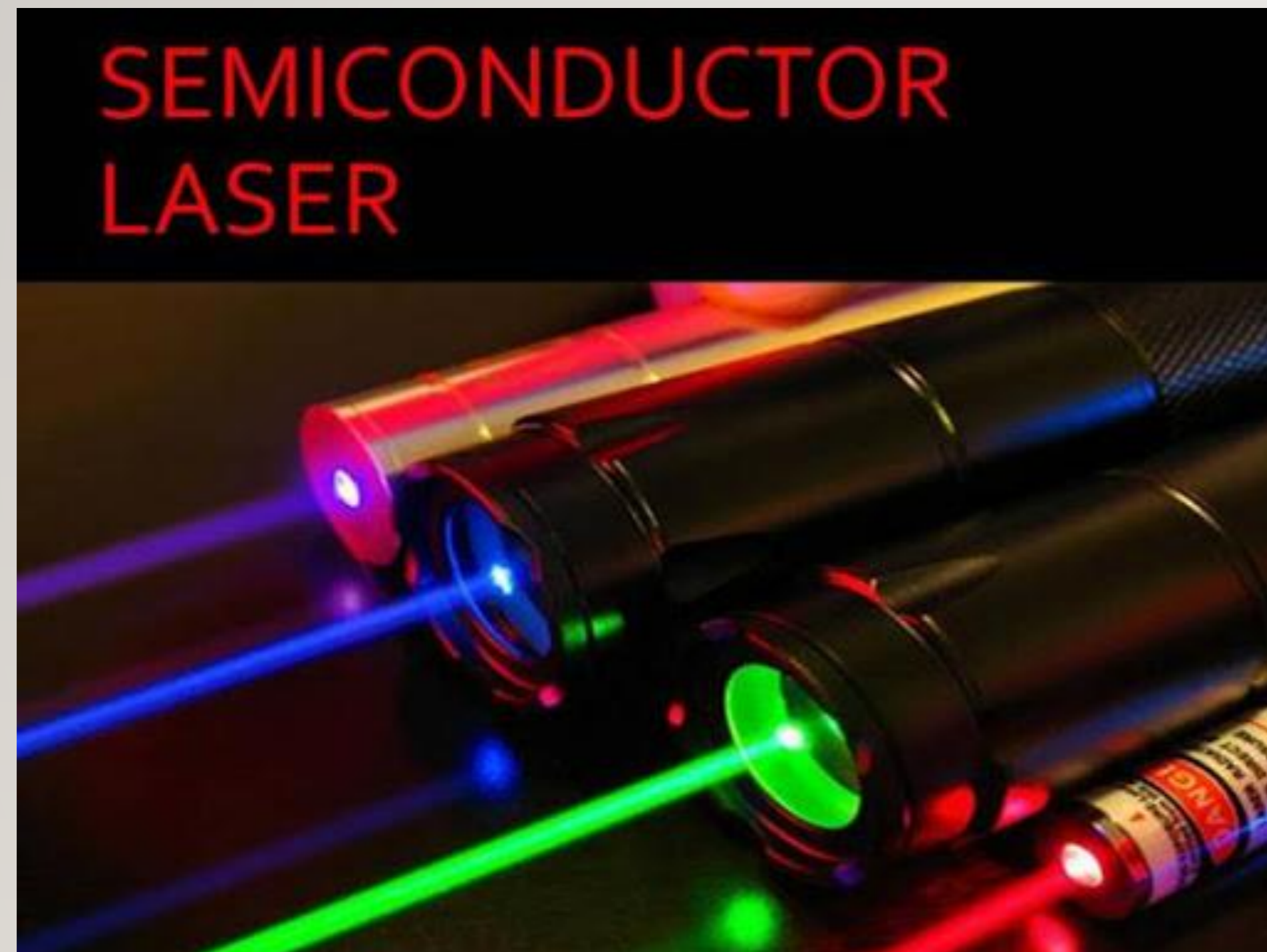
SISTEM KOMUNIKASI OPTIK

- **MATERI 6**
- **LASER DIODA SEMIKONDUKTOR**

- D3 Teknologi Telekomunikasi – Fakultas Ilmu Terapan



PENDAHULUAN



- Monokromatis, Koheren, dan Terarah
- Proses Emisi Terstimulasi
- Perbedaan dengan Laser lainnya (Solid state, Gas, Liquid):
 1. Ukuran Kecil
 2. Efisiensi Tinggi
 3. Dayanya kecil atau Menengah
 4. Cocok untuk Komunikasi Serat Optik

Sumber Referensi :

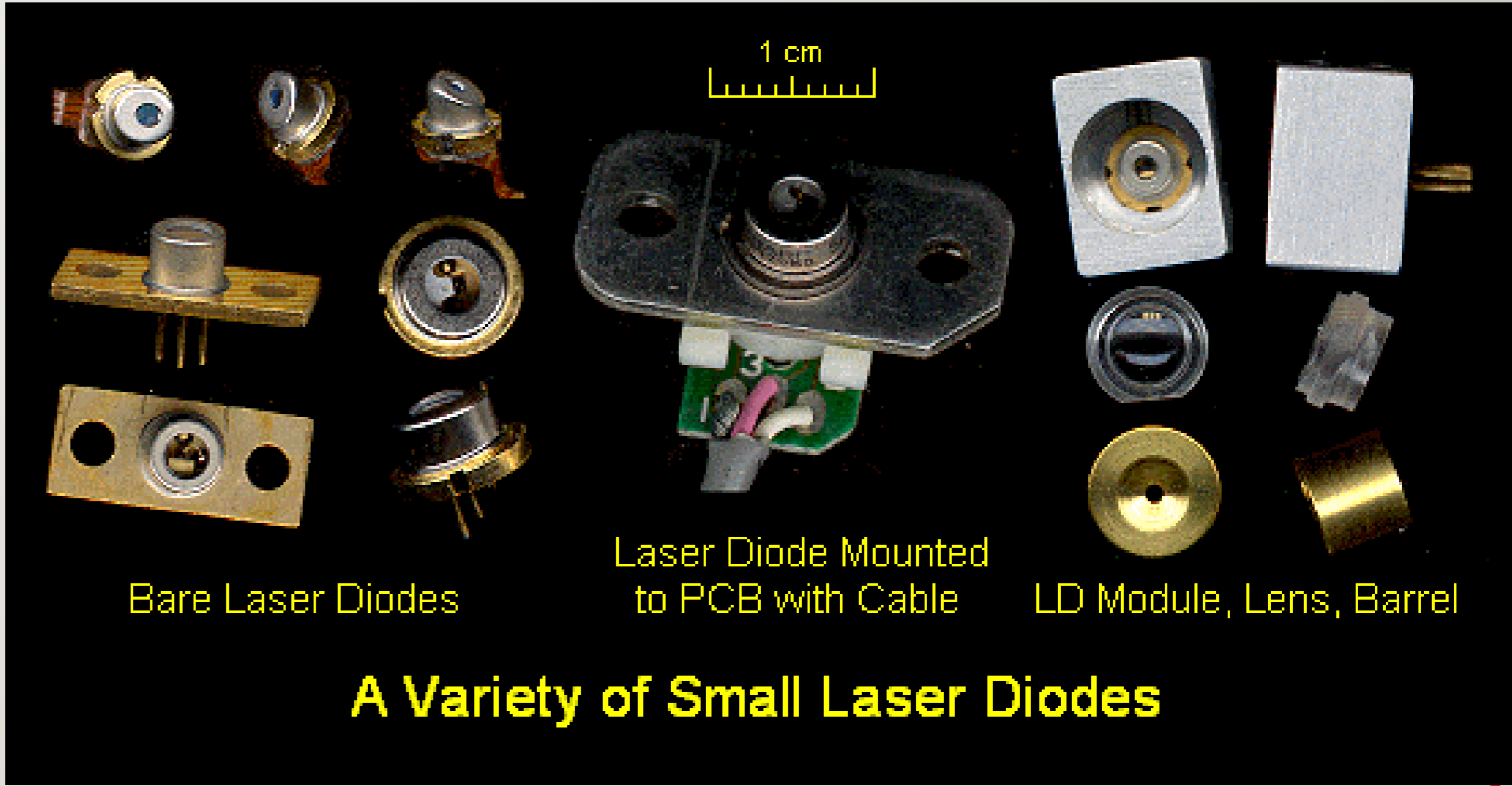
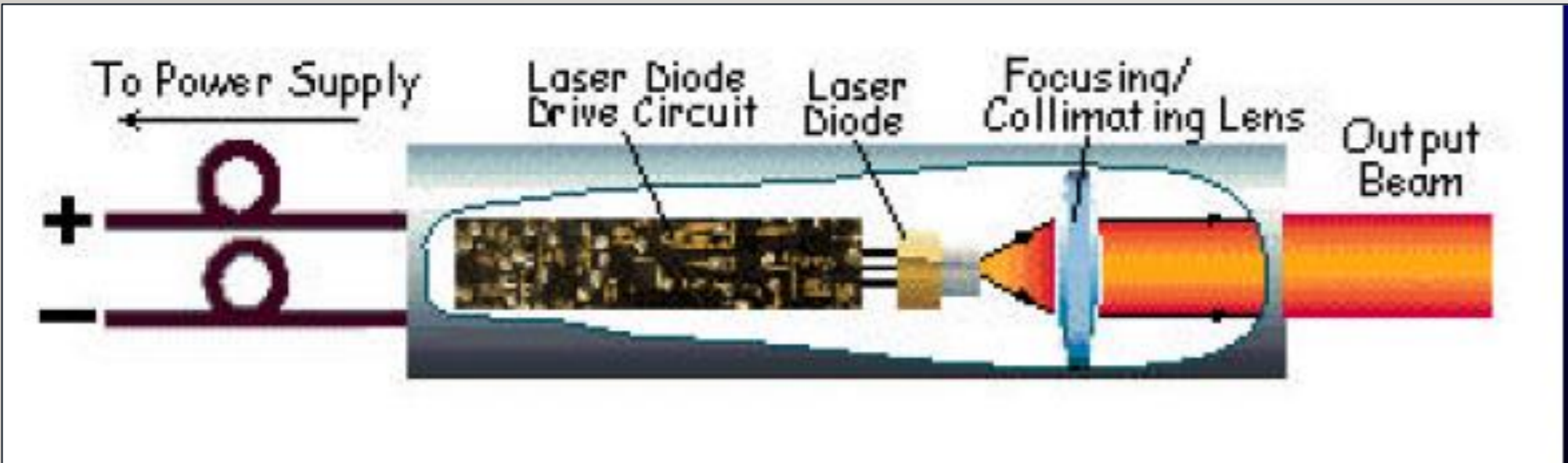
Sumber Referensi : <http://www.authorstream.com/Presentation/supriyathakur7-2745438-semiconductor-lasers/>
Gerd Keiser, 2010, *Optical Fiber Communications*, 4th edition, McGraw Hill, International Edition

PERBANDINGAN

- LASER Diode Semikonduktor**
- Emisi Stimulus
- Koheren
- Daya Output Tinggi
- Tahan Terhadap Suhu
- Efisiensi Koplingnya Ke Fiber Tinggi

- LED**
- Emisi Spontan
- Non Koheren
- Daya Output Rendah
- Rentan Terhadap Suhu
- Efisiensi Koplingnya Ke Fiber Rendah

BENTUK LASER DIODE SEMIKONDUKTOR



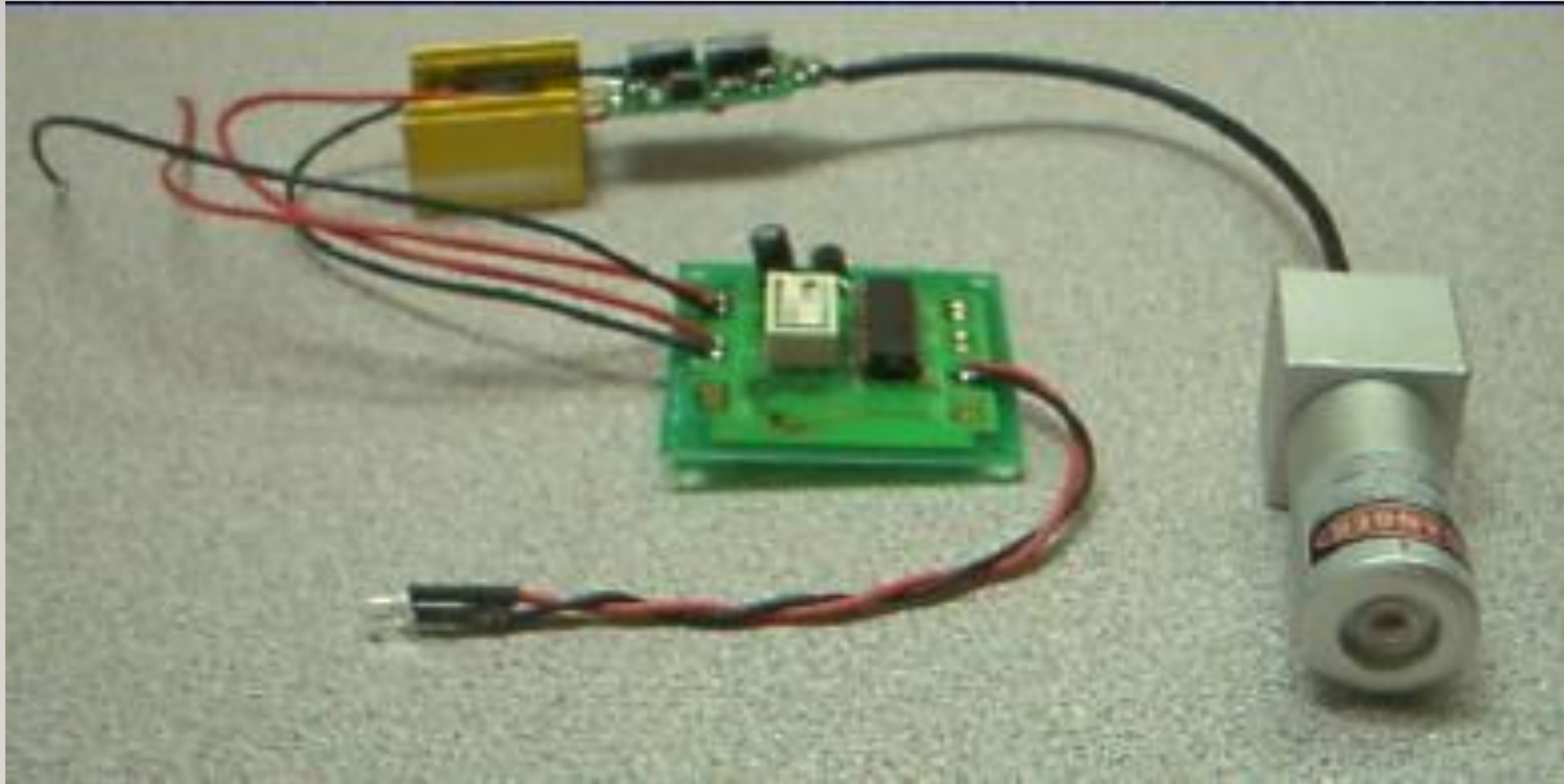
Bare Laser Diodes

Laser Diode Mounted to PCB with Cable

LD Module, Lens, Barrel

A Variety of Small Laser Diodes

BENTUK LASER DIODE SEMIKONDUKTOR



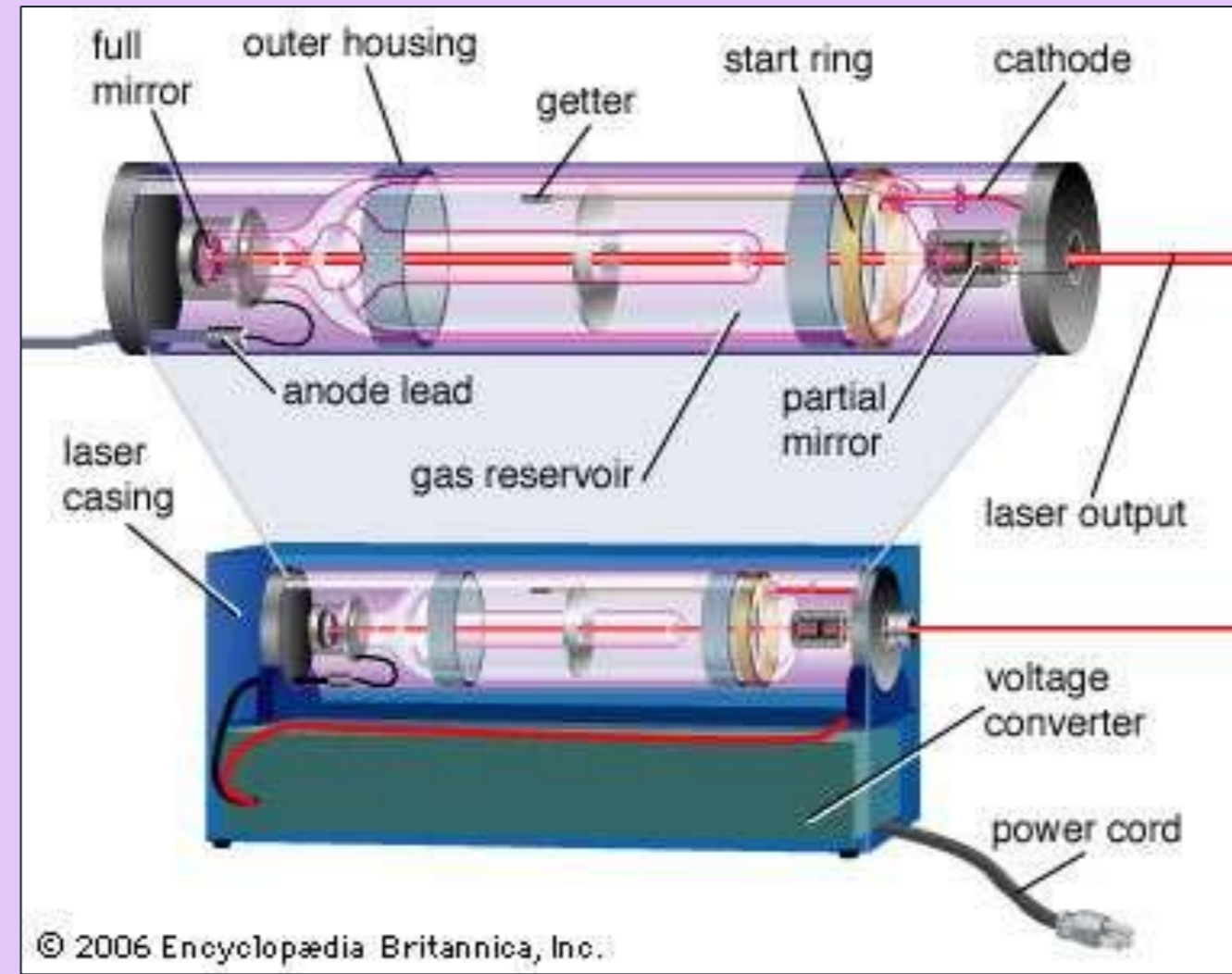
Gambar 1



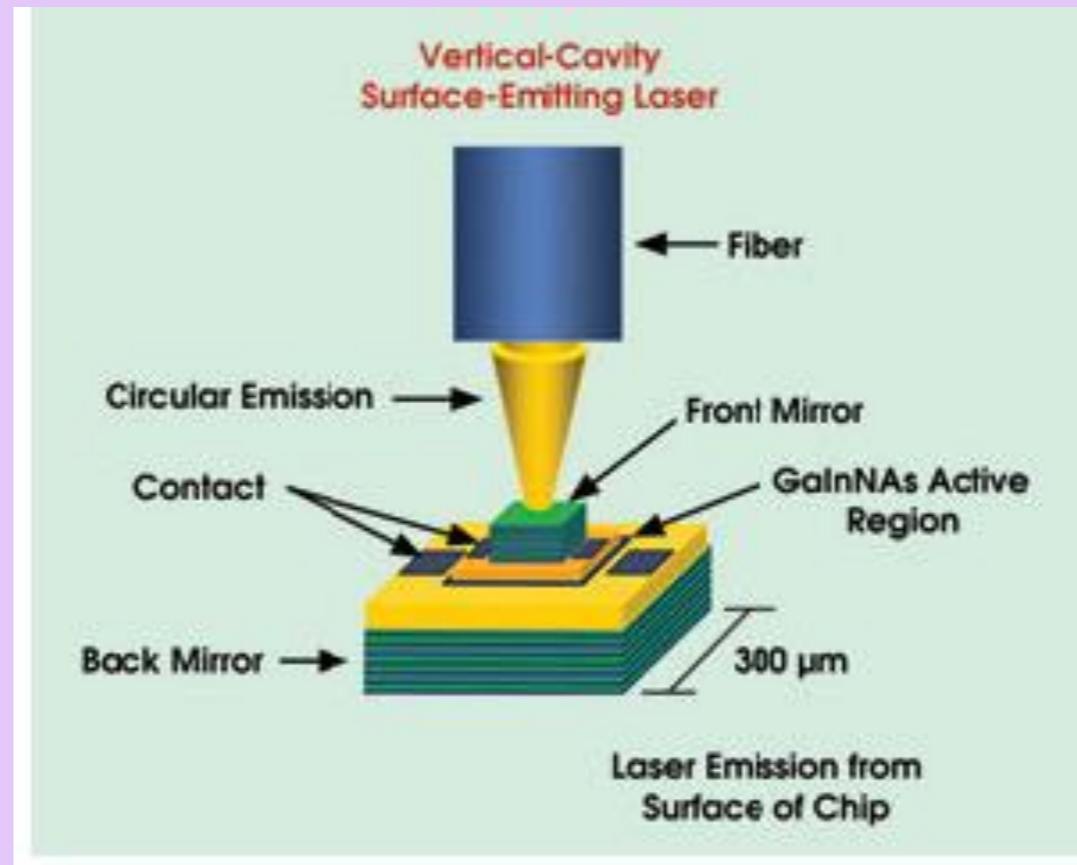
Gambar 2

JENIS LASER

1. LASER Continuous Wave (CW)

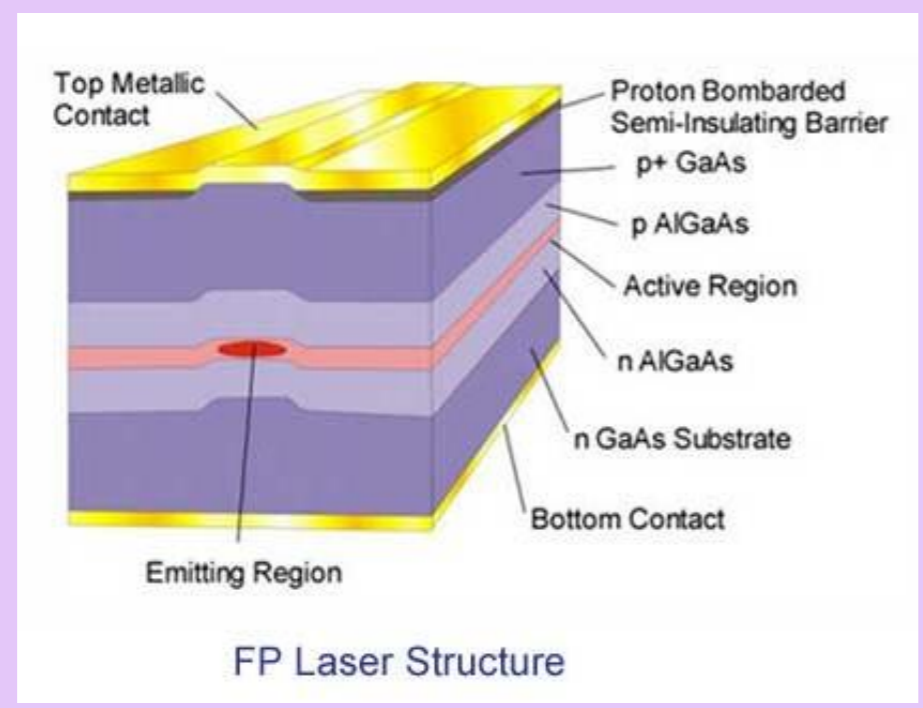


2. Vertical Cavity Surface Emitting Laser (VCSEL)

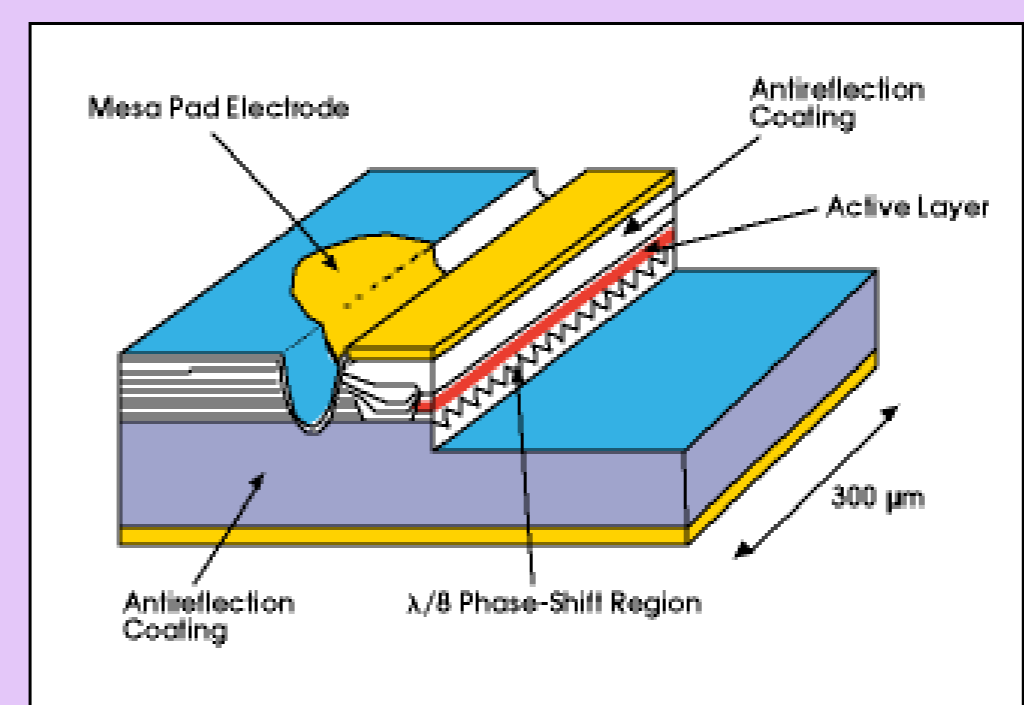
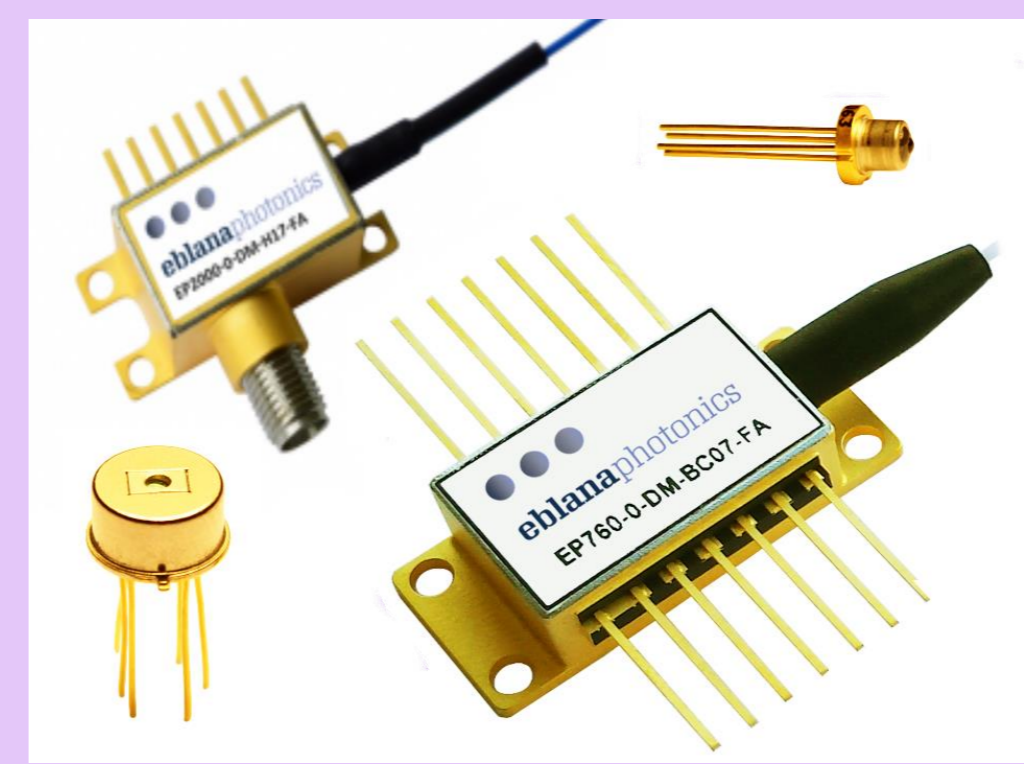


JENIS LASER

3. Fabry-Perot Laser (FP)



4. Distributed Feedback Laser (DFB)





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