

- Kilowatts, 500 W - 5 kW

Tunable terahertz radiation

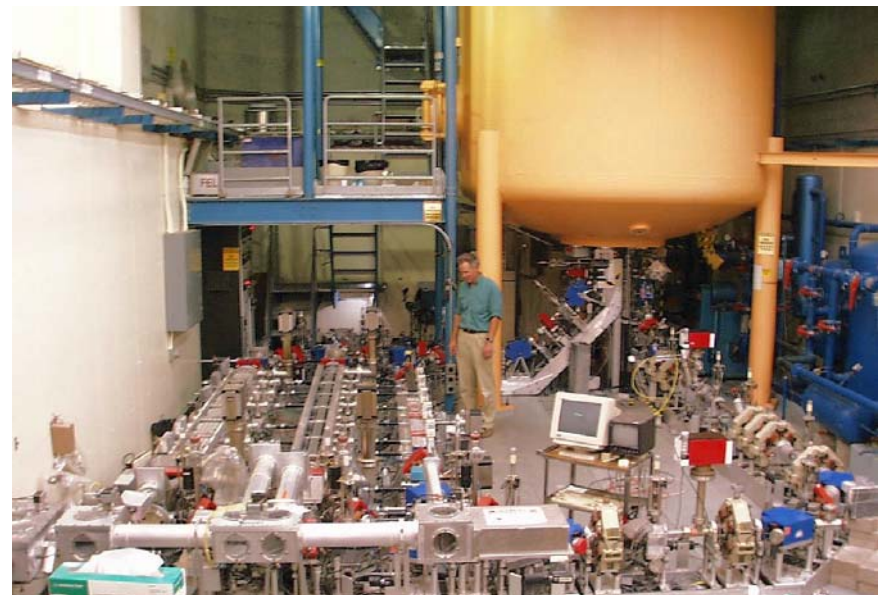
120 GHz to 4.8 THz

2.5 mm to 60  $\mu$ m

1- 20  $\mu$ secs, 1 Hz repetition rate (“Quasi - CW”)

~1 picosec to 4 nanosecond Pulse Slicer

## UCSB Free-electron Lasers Quasi - CW



# UCSB Free-electron Lasers Quasi - CW

- Kilowatts, 500 W - 5 kW

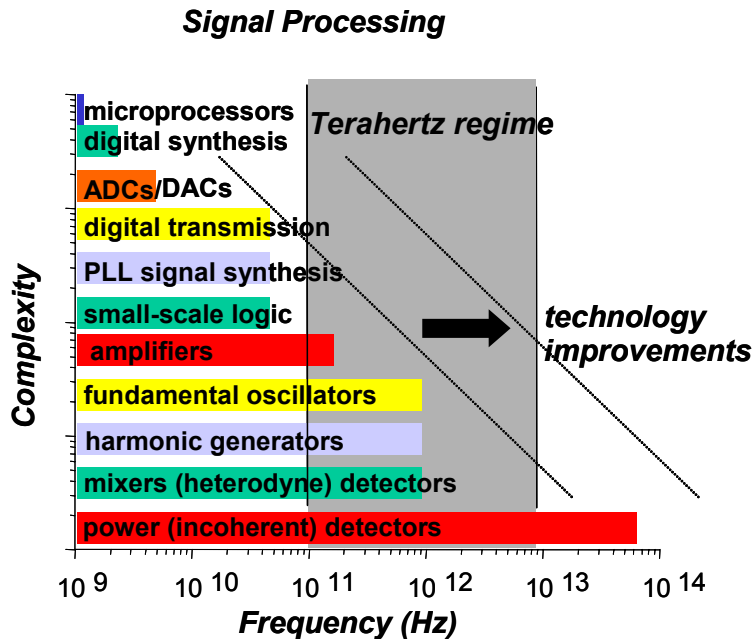
Tunable terahertz radiation

120 GHz to 4.8 THz

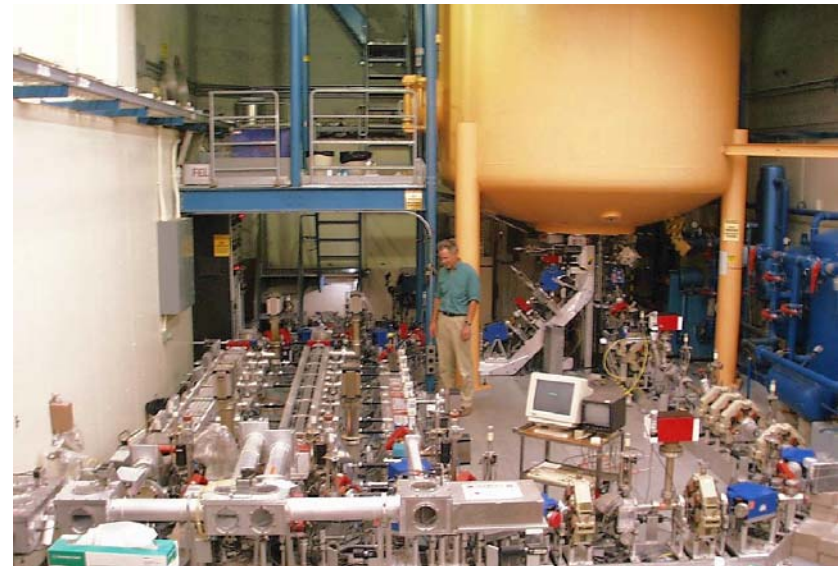
2.5 mm to 60 μm

1- 20 μsecs, 1 Hz repetition rate (“Quasi - CW”)

~1 picosec to 4 nanosecond Pulse Slicer



Source: M.J.W. Rodwell



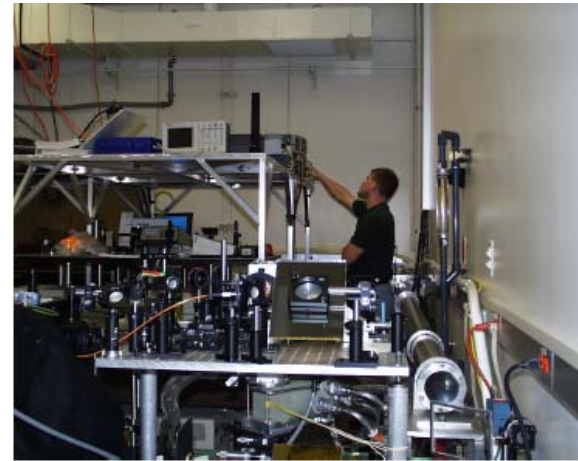
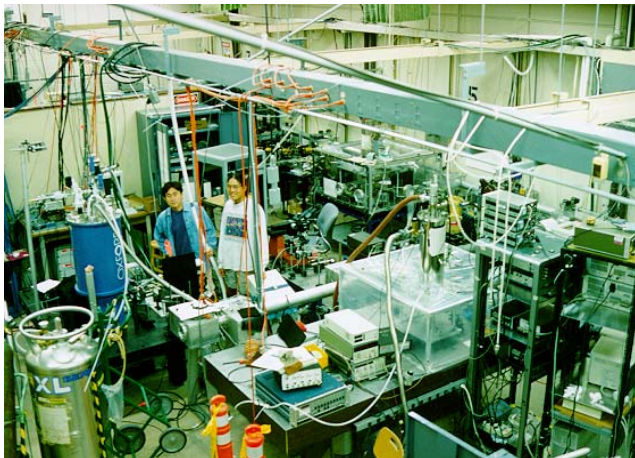
# UCSB FEL Facilities

- Molecular gas lasers
- Bruker FTIR
- THz time domain spectrometer

## High Field Magnets

to 12 Tesla, Temperatures to 1.5 Kelvin

**Cryostats** to 1.5 Kelvin



## Detectors

Composite bolometers

InSb hot electron bolometers

Schottky diodes

Ga:Ge photoconductor

**C.W. Ti : sapphire laser**

**Regeneratively - amplified Ti: sapphire laser**

(790 nm, 10 mJ, 150 fs, 10 Hz)

**2 - Ar<sup>+</sup> ion lasers**

**Mode - locked Ti: sapphire laser**

(700 - 900 nm, .5 watts, 60 fsec, 80 MHz)

**Intensified CCD camera**

on imaging spectrograph (400 - 900 nm,

75 ns gate width, 1024 pixels)

**Double Monochromator (0.85 m)**

**Single Monochromator (0.30 m)**

