

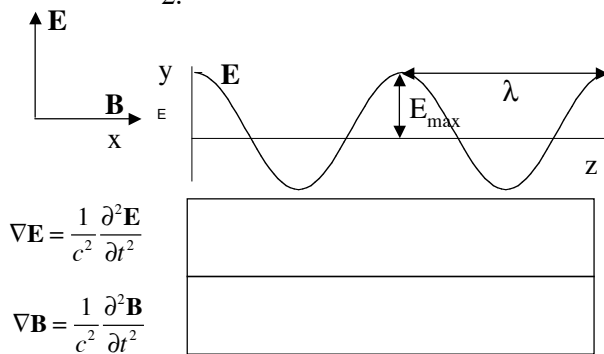
Electromagnetic Radiation

What can you discover about what molecules are doing from their interactions with light?

What is light? What are its properties?

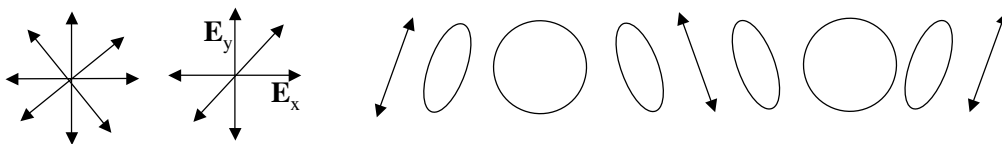
1.

2.



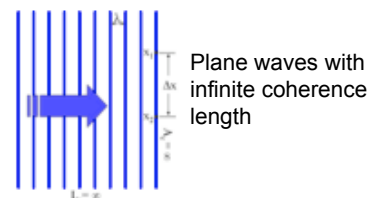
EMR Properties (cont.)

Any wave can be considered a combination of orthogonal components. If those components have a non-random relationship, the resulting light waves are called **polarized** -



Plane of polarization contains E oscillation and direction of propagation.

Light waves from two sources are **coherent** if

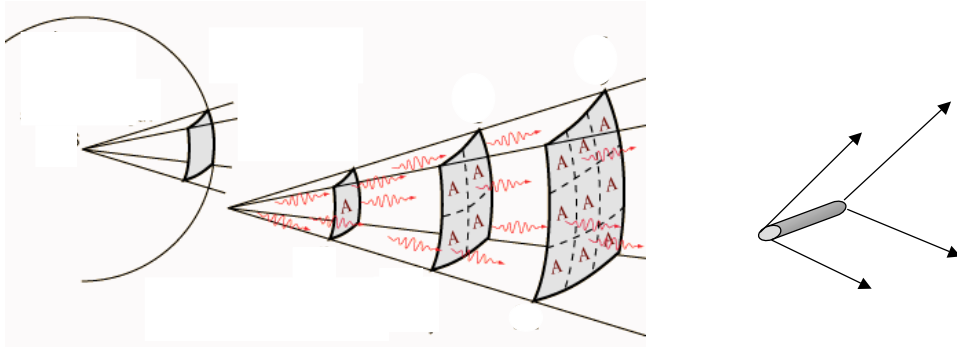


Plane waves with
infinite coherence
length

[http://en.wikipedia.org/wiki/Coherence_
%28physics%29](http://en.wikipedia.org/wiki/Coherence_%28physics%29)

Types of Sources I

- Point Source
- Extended Source



<http://hyperphysics.phy-astr.gsu.edu/hbase/forces/isq.html>

Radiometric Units

Quantity	Definition	Symbol	Units	
Power (Radiant Flux)	Radiant energy per unit time			
Radiant Intensity	Radiant power per unit solid angle			
Radiance	Radiant power per unit solid angle per unit proj.area			
Irradiance	Radiant power per unit area			