

Spontaneous Emission Faster than Stimulated Emission

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For more than 50 years, stimulated emission has been stronger and far more important than spontaneous emission. Indeed spontaneous emission has been looked down upon, as a weak effect. Now, a new science of enhanced spontaneous emission is emerging, that will make spontaneous emission faster than stimulated emission. This new science depends upon the use of optical antennas to assist the spontaneous emission.

The overall enhancement in spontaneous emission rate could be 3 orders of magnitude, or more. This technology emerges at the present time owing to our ability to create metallic structures at the nano-scale, that can act as antennas for atoms, molecules and semiconductors.

The latest experimental results will be presented for spontaneous emission enhancement from antennas on semiconducting dots.