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**Photonic Crystals-Inhibited Spontaneous Emission:
Optical Antennas-Enhanced Spontaneous Emission**

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Photonic crystals are also part of everyday technological life in opto-electronic telecommunication devices that provide us with internet, cloud storage, and email. But photonic crystals have also been identified in nature, in the coloration of peacocks, parrots, chameleons, butterflies and many other species.

In spite of its broad applicability, the original motivation of photonic crystals was to create a “bandgap” in which the spontaneous emission of light would be inhibited. Conversely, the opposite is now possible. The “optical antenna” can accelerate spontaneous emission. Over 100 years after the radio antenna, we finally have tiny “optical antennas” which can act on molecules and quantum dots. Employing optical antennas, spontaneous light emission can become faster than stimulated emission.