# Article information:

Modifying magnetic dipole spontaneous emission with nanophotonic structures - Baranov - 2017 - Laser &amp; Photonics Reviews - Wiley Online Library
<https://onlinelibrary-wiley-com-s.libvpn.scnu.edu.cn:20080/doi/10.1002/lpor.201600268>

# Article summary:

1. Spontaneous emission of a quantum source into free space is a key phenomenon across the whole area of quantum optics.

2. The Purcell effect describes how the spontaneous emission rate can be modified by varying an electromagnetic environment of the source.

3. This paper reviews advances in the field of spontaneous emission enhancement of MD quantum emitters with nanophotonic systems, and provides an outlook on challenges that remain open.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is written in a clear and concise manner, providing an overview of the current state-of-the-art advances in the field of spontaneous emission enhancement of MD quantum emitters with nanophotonic systems. The article is well-structured and provides a comprehensive review of relevant literature, including classical textbooks, research papers, and other sources. The authors provide a detailed explanation of the Purcell effect and its applications to various quantum sources, as well as an overview of available magnetic quantum sources and realizations of specific nanophotonic structures allowing for enhanced MD spontaneous emission.

The article does not appear to have any biases or one-sided reporting; it presents both sides equally and does not contain any promotional content or partiality. All claims are supported by evidence from relevant literature, and all potential risks are noted where appropriate. There are no missing points of consideration or unexplored counterarguments; however, there could be more discussion on possible future directions for research in this field.

# Topics for further research:

* Magnetic dipole quantum emitters
* Purcell effect enhancement
* Nanophotonic structures
* Spontaneous emission rate
* Quantum dot emitters
* Plasmonic nanostructures

# Report location:

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