

29.4. *Indistinguishable photons from a single-photon device*, C. Santori, et al., *Nature* **419**, 594 (2002)

**Presenter (10 min):**

Sketch the key results. 3 slides at maximum!

Bibliometrics: what do you know about the authors and impact of the paper?

Based on the bibliometrics, do you think the paper is a milestone?

1. What is the key difference of single photon sources (SPS) compared to Poisson-sources?
2. What are the most important requirements on a SPS? Why are these so important?
3. What is the Hong-Ou-Mandel (HOM) effect?
4. Can you theoretically reproduce the HOM effect on paper?
5. Why is the HOM so important?
6. Why are semiconductor quantum dots attractive for SPS?
7. What is the Purcell effect?
8. Why is the sample cooled to 3–7 K?
9. What is the meaning of the  $g^{(2)}$  value?
10. What does “brightness” mean? What is the brightness of the used SPS?
11. What is the relation between linewidth, radiative decay rate and coherence length of an ideal/realistic SPS?
12. How are the spectral linewidth and the radiative decay rate measured?
13. What is the experimental trick to measure two-photon interference with a single photon source? Explain the five-peak structure visible in Fig. 3 b!
14. Which imperfections lead to the reduced visibilities shown in Fig. 4?