# Simulations of Nanophotonic Structures

# Part 1 – Light in multilayers: etalons, cavities and Bragg Mirrors

## Introduction to investigation

If we consider a laser without an etalon, it will produce light over a wavelength range which correspond to several cavity modes, these are analogous to Fabry-Perot modes and the laser is referred to as a multi-mode laser. Thus, if we then fit an etalon (cavity), in this case a GaAs semiconductor, we can form a single-mode laser by suppressing all cavity modes except for one.

## Technical approach

## Computer model validation

## Related work

## Applications

## Conclusion

## Appendix (if necessary)

# References

**There are no sources in the current document.**

D. Assessment

Each report should contain the following.

• A brief statement of the objective of the investigation.

• A brief description of the technical approach, where any modification to the standard method has

been made.

• Validation of the computer model by comparison with analytical solutions or special cases.

• Values for any material parameters that have been looked up. These must be from authenticated

sources (refereed journals, books, etc) and must be fully referenced.

• A brief discussion of any prior or related work that you have identified as relevant.

• A description on the main investigation, summarizing the results and their significance. The

description should be rigorous but concise, and should show how the objective of the study was met.

• A comment on the application to a selected photonic device, showing clearly the relevance of your

results to its performance or design.

• A brief conclusion of your work, including its significance and any opportunities for further work

that you have identified.

• Appendices can be attached, but the main text should be understandable and complete without the

appendices.

• If significant changes to the programme have been made, they should be described in an appendix

rather than the main text.