

Docket #: S05-035

SPBF: Fast Photonic Bandgap Fiber-made Solver

A method and apparatus models one or more electromagnetic field modes of a waveguide. The method includes sampling a two-dimensional cross-section of the waveguide. The method further includes calculating a first matrix having a plurality of elements and having a first bandwidth using the sampled two-dimensional cross-section of the waveguide. The plurality of elements of the first matrix represents an action of Maxwell's equations on a transverse magnetic field within the waveguide. The method further includes rearranging the plurality of elements of the first matrix to form a second matrix having a second bandwidth smaller than the first bandwidth. The method further includes shifting the second matrix and inverting the shifted second matrix to form a third matrix. The method further includes calculating one or more eigenvalues or eigenvectors of the third matrix corresponding to one or more modes of the waveguide.

This patent is available for licensing through Stanford's exclusive licensee. Please contact Dennis Fortner at: Dennis.Fortner@ngc.com for licensing information.

Patents

- Published Application: [20060133763](#)
- Published Application: [WO2006044059](#)
- Published Application: [20090192769](#)
- Issued: [7,505,881 \(USA\)](#)
- Issued: [8,407,036 \(USA\)](#)

Innovators

- Vinayak Dangui

- Michel Digonnet
- Gordon Kino

Licensing Contact

Luis Mejia

Senior Licensing Manager, Physical Sciences

[Email](#)