Cd_3As_2 terahertz generation from two-color optical code package

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1 Build the code

This code packages require libraries "FFTW" and "EIGEN". By enable and build the "python" package, this c++ package calls python to plot data. However, the python plot function is not thread safe. For multi-threading, please do not enable the python related functions.

1.1 Build using cmake

Make sure that your cmake version is > 3.0. Put the "CMakeLists.txt" file to the directory where you want to build the external libraries of the code. Go to the folder where "CMakeLists.txt" exists. Do the following

```
mkdir build
```

to inside the build file

```
cd build
```

do

```
cmake ..
make -j 10
```

This will automatically configure the external libraries of this code ("FFTW" and "EIGEN"). This will take a while.

1.2 Build on your own

Alternatively, you could build the "FFTW" and "EIGEN" on your own from their official web pages.

2 Run the code

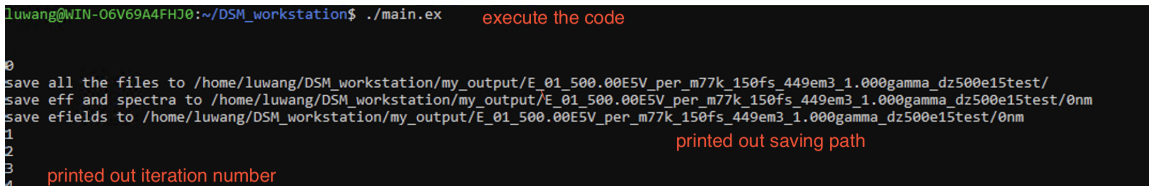
In the "Makefile", make sure to link the external libraries ("FFTW" and "EIGEN") to your local directory. Generate the executable by

```
make main.ex
```

Run the executable by

```
./main.ex
```

When the code is running, you should see the following.



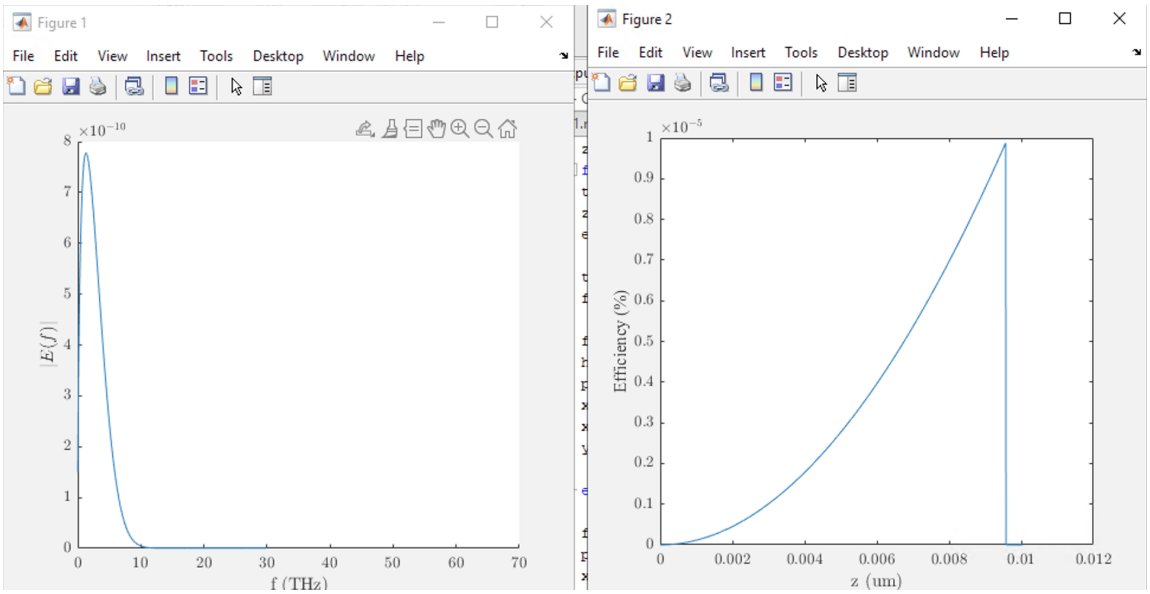
The printed out number is N_z, which is not the iteration number of the for loop. It is a process indicator and a effective saved array. You can choose to change the saving array size by changing variable N_z.

You can clear the executable by

```
make clean
```

3 data process

The output files will be saved in "my_output" directory. The print out on the screen is the save folder name. Inside the data folder, one data processing MATLAB code named "plot_test.m" is presented. You should see the terahertz spectrum and the conversion efficiency versus propagation distance plotted as the following



Enjoy life and happy coding. For any question please address to

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