

TELBE beamtime: 15.06.2018 nigh shift

Notebook: Old TELBE Notebook (1)

Created: 15.06.2018 22:17

Updated: 09.08.2018 13:09

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NA: Continue with temperature dependence of DyBCO

22:10 power - 107mW

file: 185_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_55K

set temperature to 60K

22:20 power - 106,5 mW

file: 186_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_60K

22:30 temperature 66K

power 105mW

file: 187_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_66K

22:40 temperature 70K

file: 188_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_71K

22:45 set temperaure to 75K

power - 105 mW

file: 189_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_75K

22:55 temperature set to 80K

power - 108mW

file: 190_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_80K

23:05 power - 109 mW

set temperature to 85K

file: 191_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_85K

23:15

power - 110 mW

set temperature to 90K

file: 192_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_90K

23:25

power - 109 mW

set temperature to 95K

file: 193_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_95K

at the end temperature was 95.6K

23:33

power - 108 mW

set temperature to 100K

file: 194_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_100K

23:45

power - 104 mW

set temperature to 105K

file: 195_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_105K

23:53
power - 103 mW
set temperature to 85K
file: 196_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_110K

Moved the sample out and calibrating the polarization angles.

Did the calibration for polarization dependence by measuring power at sample position.

put sample back in
00:38 power BDA - 110 mW
sample at 120K, P1 157°, P2 49°, P3 180°
file: 197_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_123K

00:50 power - 104 mW
sample at 120K, P1 157°, P2 49°, P3 180°
file: 198_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_135K
aborted, sample was not placed in the focus.

00:58
Moved the sample to focused position
Sample cooled to 125K, P1 157°, P2 49°, P3 180°
power - 104
file: 199_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_125K

01:08
power - 103 mW
sample at 135K, P1 157°, P2 49°, P3 180°
file: 200_0p7THz_DyBCO_THG_P1_157_P2_49_P3_180_135K

01:31
added half waveplate (HWP) which delays beam by 5.2mm. changed scan start position to 53.3mm.

01:43
sample at 55K, HWP 126°, P2 49°, P3 180°, P3.5 227°
file: 201_0p7THz_DyBCO_THG_HWP_126_P2_49_P3_180_P3p5_227_55K

01:54
sample at 55K, HWP 130°, P2 59°, P3 190°, P3.5 227°
file: 202_0p7THz_DyBCO_THG_HWP_130_P2_59_P3_190_P3p5_227_55K

02:00
The time window does not look good. changed scan start position to 55.3 mm.

02:02
sample at 54.8K, HWP 126°, P2 49°, P3 180°, P3.5 227°
file: 203_0p7THz_DyBCO_THG_HWP_126_P2_49_P3_180_P3p5_227_54p8K

02:15
sample at 54.7K, HWP 130°, P2 59°, P3 190°, P3.5 227°
file: 204_0p7THz_DyBCO_THG_HWP_130_P2_59_P3_190_P3p5_227_54p7K

02:22
sample at 54.7K, HWP 134°, P2 65°, P3 196°, P3.5 227°
file: 205_0p7THz_DyBCO_THG_HWP_134_P2_65_P3_196_P3p5_227_54p7K

02:28
sample at 54.7K, HWP 137°, P2 71°, P3 202°, P3.5 227°
file: 206_0p7THz_DyBCO_THG_HWP_137_P2_71_P3_202_P3p5_227_54p7K

02:34

sample at 54.7K, HWP 140°, P2 78°, P3 209°, P3.5 227°

file: 207_0p7THz_DyBCO_THG_HWP_140_P2_78_P3_209_P3p5_227_54p7K

02:41

sample at 54.7K, HWP 142°, P2 82°, P3 213°, P3.5 227°

file: 208_0p7THz_DyBCO_THG_HWP_142_P2_82_P3_213_P3p5_227_54p7K

02:48

sample at 54.7K, HWP 147°, P2 94°, P3 225°, P3.5 227°

file: 209_0p7THz_DyBCO_THG_HWP_147_P2_94_P3_225_P3p5_227_54p7K

02:56

sample at 54.7K, HWP 152°, P2 106°, P3 237°, P3.5 227°

file: 210_0p7THz_DyBCO_THG_HWP_152_P2_106_P3_237_P3p5_227_54p7K

03:03

sample at 54.7K, HWP 154°, P2 110°, P3 241°, P3.5 227°

file: 211_0p7THz_DyBCO_THG_HWP_154_P2_117_P3_241_P3p5_227_54p7K

03:09

sample at 54.7K, HWP 157°, P2 117°, P3 248°, P3.5 227°

file: 212_0p7THz_DyBCO_THG_HWP_157_P2_117_P3_248_P3p5_227_54p7K

03:19

sample at 54.7K, HWP 160°, P2 123°, P3 254°, P3.5 227°

file: 213_0p7THz_DyBCO_THG_HWP_160_P2_123_P3_254_P3p5_227_54p7K

03:25

Halfway in the scan, the THz beam has gone. Operators said it will take an hour to bring it back.

04:07

THz beam back, THz power = 101 mW

04:08

sample at 54.7K, HWP 160°, P2 123°, P3 254°, P3.5 227°

file: 214_0p7THz_DyBCO_THG_HWP_160_P2_123_P3_254_P3p5_227_54p7K

04:15

sample at 54.7K, HWP 161°, P2 129°, P3 260°, P3.5 227°

file: 215_0p7THz_DyBCO_THG_HWP_161_P2_129_P3_260_P3p5_227_54p7K

04:21

sample at 54.7K, HWP 161°, P2 139°, P3 270°, P3.5 227°

file: 216_0p7THz_DyBCO_THG_HWP_161_P2_139_P3_270_P3p5_227_54p7K

After measurement, THz power = 60 mW, asked operators to optimize it.

THz power = 94 mW

We will repeat the previous measurement with same configuration.

04:31

sample at 54.7K, HWP 161°, P2 139°, P3 270°, P3.5 227°

file: 217_0p7THz_DyBCO_THG_HWP_161_P2_139_P3_270_P3p5_227_54p7K

04:37

THz power = 80 mW, asked operators to optimize it again.

THz power = 97 mW

04:40

sample at 54.7K, HWP 137°, P2 71°, P3 202°, P3.5 249°

file: 218_0p7THz_DyBCO_THG_HWP_137_P2_71_P3_202_P3p5_249_54p7K

THz power = 95 mW

04:49

sample at 54.7K, HWP 137°, P2 71°, P3 112°, P3.5 249°

file: 219_0p7THz_DyBCO_THG_HWP_137_P2_71_P3_112_P3p5_249_54p7K

04:56

THz power = 103 mW

05:15 warmed sample to room temperature.

measured THz power for different wire grid polarization settings at ZnTe position.