Gmail **Eric Landahl <elandahl@gmail.com>**

SHG light will help

5 messages

Soo Lee <sooheyong@gmail.com> Sat, Aug 5, 2017 at 5:59 PM
To: "DiChiara, Anthony D." <adichiara@aps.anl.gov>
Cc: "Landahl, Eric C." <elandahl@depaul.edu>

Hi Anthony,

So I woke up and talked to Eric on the phone briefly.

We do not see any voltage related effect with 800 nm light. After some investigation, Eric and Jo found out that there is hardly any laser induced photo-currents in this sample as it is.

However Eric did a quick test with alignment laser (I assume it is HeNe), and it actually generates considerably more photocurrent despite its low intensity.

And thus, we believe that switching to SHG light will help tremendously. It would be great if you could set it up tomorrow morning when you are available.

I-V curve looks very similar as it was measured back in Korea. The field strength should be quite strong. It is only 500 nm thick.

Regards,

Soo

On Sun, Aug 6, 2017 at 4:23 AM, DiChiara, Anthony D. <adichiara@aps.anl.gov> wrote:

> Eric,
>
> We can figure out something with the SHG. Just keep me in the loop as to when I can do this, and if possible my preference would be early morning tomorrow. If we can get away with keeping the same lens, I think I can set it up in a way that can be pulled out if it turns out to not be useful.
>
> A few questions:

Seeing any voltage related influence?

Do the I-V curves you've taken here match the ones taken in Korea?

Have you tried probing different regions of the sample and or the other biased pad? One idea would be to find the gold with the x-rays to orient yourself on the sample. Not sure how easy/hard that would be with the APD, but we've done it with the pilatus. Obviously much easier...

What is the applied E-field magnitude?

Regards,
Anthony DiChiara

Time Resolved Research Group
http://www.aps.anl.gov/Xray_Science_Division/Time_Resolved_Research/
BioCARS
http://biocars.uchicago.edu
LinkedIN Profile
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From: elandahl@gmail.com <elandahl@gmail.com> on behalf of Eric Landahl <elandahl@depaul.edu>
Sent: Saturday, August 5, 2017 1:54:36 PM
To: DiChiara, Anthony D.
Cc: Lee, Sooheyong
Subject: Re: Laser is down [Urgent]

Hi, sorry to miss the call, everything is going well. Soon and Jo are resting and I have increased us to the full DAC current (20 mA at <10 V), and I am taking more data.

One idea we have come up with is to move to second harmonic light (long story). We wouldn't ask you for this today, and we are not sure we really want this, I guess I'm just putting out a feeler to see if this would be a possibility Sunday if we really felt it would help.

On Aug 5, 2017 11:35 AM, "DiChiara, Anthony D." <adichiara@aps.anl.gov> wrote:

> Hi Guys,
>
> Just tried calling. How's everything going? Any progress on the biased samples and is everything working ok?
>
> Regards,
> Anthony DiChiara
>
> Time Resolved Research Group
> http://www.aps.anl.gov/Xray_Science_Division/Time_Resolved_Research/
> BioCARS
> http://biocars.uchicago.edu
> LinkedIN Profile
> https://www.linkedin.com/in/anthony-dichiara/
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From: Soo Lee <sooheyong@gmail.com>
Sent: Saturday, August 5, 2017 3:20:34 AM
To: Landahl, Eric C.; Landahl, Eric; DiChiara, Anthony D.
Subject: Laser is down [Urgent]

Dear all,

I cannot see the laser. In fact, the signal on the 7idc-agilent scope is gone.

Help.

Regards,

Soo

--
Sooheyong Lee

Principal Research Scientist
Division of Convergence Technology,
Korea Research Institute of Standards and Science (KRISS)
University of Science and Technology (UST)
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w: sites.google.com/site/fepkriss/collaboration e: sooheyong@gmail.com
alternate emails: soobydoo@kriss.re.kr, soobydoo@ust.ac.kr

Soo Lee <sooheyong@gmail.com> Sat, Aug 5, 2017 at 8:45 PM
To: "DiChiara, Anthony D." <adichiara@aps.anl.gov>, "Landahl, Eric" <elandahl@gmail.com>, "Landahl, Eric" <elandahl@depaul.edu>

Any time that you are convenient will be good, earlier the better.

Well I are running out of things to do with 800 nm.

I will likely be at the beamline over night.

P.S.

I am currently back at the guest house taking rest. I will go back to the beamline soon.

On Sun, Aug 6, 2017 at 10:10 AM, DiChiara, Anthony D. <adichiara@aps.anl.gov> wrote:

> What time were you thinking, or could I give a call in early am to set a time up?
> [Quoted text hidden]

[Quoted text hidden]

DiChiara, Anthony D. <adichiara@aps.anl.gov> Sun, Aug 6, 2017 at 12:00 PM
To: "Lee, Sooheyong" <sooheyong@gmail.com>
Cc: "Landahl, Eric" <elandahl@gmail.com>, "Landahl, Eric C." <elandahl@depaul.edu>

How is it going with the blue light?
[Quoted text hidden]

Eric Landahl <elandahl@depaul.edu> Sun, Aug 6, 2017 at 1:42 PM
To: Anthony DiChiara <adichiara@aps.anl.gov>
Cc: soo lee <sooheyong@gmail.com>, WonHyuk Jo <wins1119@gmail.com>

It is going very well. I am pretty sure we are seeing charge transport accross the interface (from AlGaAs to GaAs) -- the timescale is not compatible with acoustic or thermal transport (which we also see). It is also a very robust effect. Although this is not bias dependent, it does meet our major goal of developing a method to watch nanoscale electron transport, and after a complete data set finishes this evening we will have a chance to return to bias measurements.

Soo is asleep now, I'm around but I might be hanging out on the couch in between scan monitoring....

Thanks for the blue light!

Eric

[Quoted text hidden]

Eric Landahl <elandahl@depaul.edu> Sun, Aug 6, 2017 at 4:50 PM
Draft To: Anthony DiChiara <adichiara@aps.anl.gov>
Cc: WonHyuk Jo <wins1119@gmail.com>, soo lee <sooheyong@gmail.com>

Also, here is Jo in a classic 7
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