

The report

On

Doing reseach at the department of Physical science

Flinders unversity Adelaide, South Australia

until 23rd May to 22nd August 2015

Submitted by

Mr. Supphachok Chanmungkalakul

SCCH 5605251

Department of chemistry, Faculty of science

Present

International relations division

Mahidol University

20th December 2015

acknowledgement

For these things I had got really good experience, Thanks to Mahidol University international relations division for giving me a chance going abroad to do my research. Thanks to Dr.Pasit Pakawatpanurut for writing the recommendation letters to Prof.Colin and also gave me good suggestions so far. Thanks to Prof.Colin L Rastion for the acceptance he always gave me new idea he taught me about the scientist's life he said it's a cycle "once you get idea, you do the experiment and you catch the experimental results with theories and you'll get new idea"

I truly appreciate that from the bottom of my heart, Thanks for giving me the chance It changed my life entirely.

Adelaide

Adelaide is a city located in south Australia, 2 hours from Sydney by planes. The city has around 1.3 million people living here. The time is faster than Thailand 3 hours. Normally Adelaide is a cold place because it's located near south pole, but sometimes the weather could change rapidly because the upper part of Adelaide, in other words the middle of Australia, is the very huge desert called great Australian desert. When the wind comes from the ocean the weather would be cold but if the wind comes from desert the weather will be so hot apparently, in someday you could be facing 3 weather (rainy, sunny, windy) in one day. For the Australian, they have their national sport called Footy like the combination between football and rugby. Adelaide seems like other cities in the world that have a city part and a country part. In the city part where china town is located that's why there are many Asian people live in the city these make Adelaide has diversity of race.

Let's talk about the people manner a one thing from many that I really love, people who live in Adelaide mostly has obviously good manner, for the example when you want to walk across the road how empty the roads are or how fast of the cars drive they will stop and wait for you to walk across the road. They separated bicycle lanes and car lanes so you're safe when using a bike or a car and no motorcycle on footpath.



This city doesn't have places for vacation times too much, but there is a good place to travel called Glenelg beach. It's the beautiful place looks powerful but claim. This is the

lovely place comparing with thai beach because no one is going to cheat you anyways and the prices of food are not difference from the city or even in the university.





The one famous natural park is named Clepark where you could come and stay close to wild animals, you could feed kangaroos or walabee by your hands and hold a koala for taking a picture. You could find out there are wild animal but friendly here.



Flinders university



Flinders university is a peaceful and quite place, it's suitable for studying and doing researches because Flinders is located far away from city and you have nowhere to go and hang over, that makes we can concentrate completely on our works.

Flinders' slogan is "We enjoy a well-justified reputation for excellence in teaching and research, have a long-standing commitment to enhancing educational opportunities for all and a proud record of community engagement."





My works and participations

I'm studying in faculty of sciences, majoring in Chemistry. My work is about physical chemistry so I'm aiming on alternative energy, hydrogen storage. At Flinders university there is a new instrument named VFD (Vortex Fluidic Device), invented by Prof. Colin L. Raston who got ig-noble prize from unboiled an egg last year. Technically, VFD is a rotating tube with very high speed it can adjustable between 2000 – 9000 rounds per minute, by this principle you can put an amount of kinetic energy without heat generation and with the centrifugal force reacts with gravity and friction of glass tube produces shearing force that can tear molecular structure apart



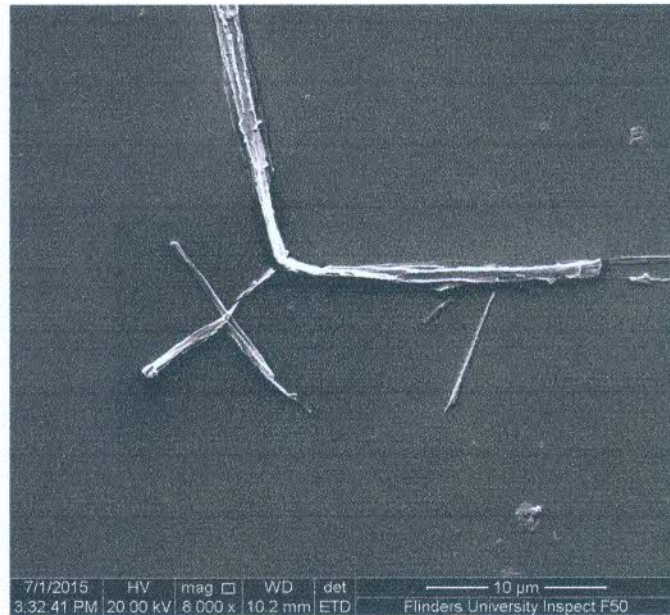
My work here was about trying to use VFD to roll graphene sheet and wrap ammonia borane inside but it was still fail until the day I left. But behind these mistakes I found something new discovery with the ultra-sonicator and graphite powder combine with ammonia borane create something very interesting



The 2 vials has the same things but the right didn't put ammonia borane while probe-sonicating, you can see there is some carbon fibers, and I'm doing on these material to investigate its properties for the publication

These are the SEM pictures of the fibers you can see the graphite flakes turned into the fiber with rod-like shape





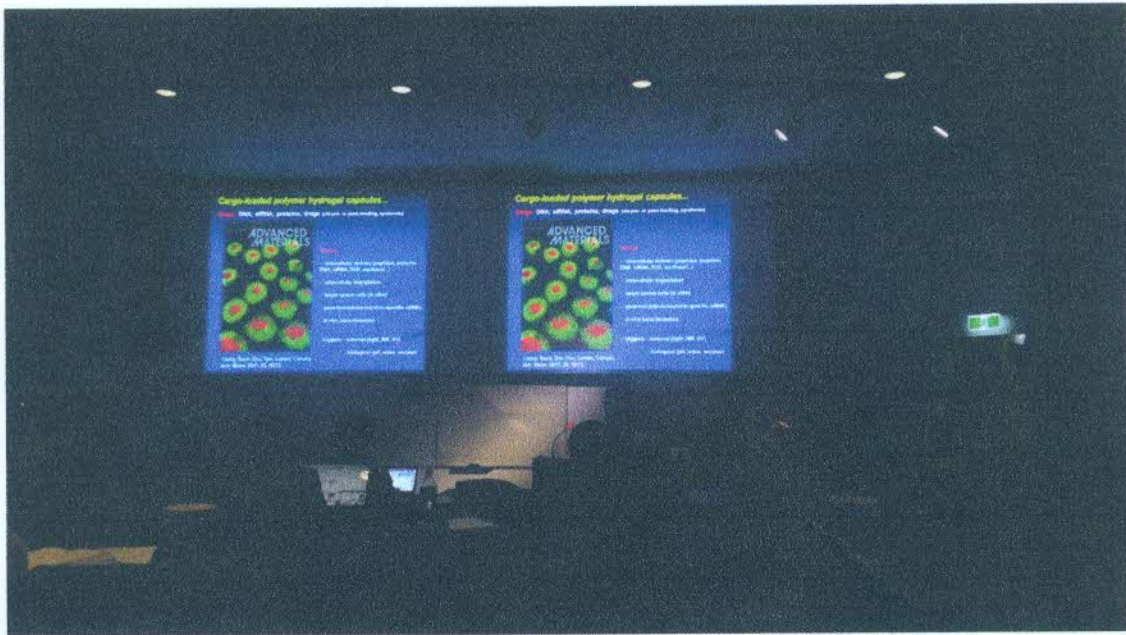
But I'm not the flinders student any process that need to authorize, such as SEM, TGA Raman or EFM, I'm not allowed to do it on my own so I had to wait until Flinders student had vacant time to do it with me. I used to wait 3 days waiting for doing SEM

global scientists conference at Flinders university tronsley

I went to the global scientists conference at Flinders university on tronsley road, it had many parts of this conference, first part was elite of each research field came to present their works or anything they wanted to, Prof.Colin was included in this part as well, It was very fun because they only had 3 minutes for the presentation. The one I'm very impressed was how to create empty capsid of virus for drug delivery.

as expected Prof.colin talked about his VFD in term of using the shearing force to unboil an egg.





acknowledgement

These are the evidences of my payment for airplane ticket and house renting (150 aud/week for 13 weeks)

ELECTRONIC TICKET

PASSENGER ITINERARY RECEIPT



AGENT: KRISNA TRAVEL CO.,LTD.
 ADDRESS: 55 MOOBAN CHONNIVET, PRACHACHUEN
 RD., LADYAO, CHATTUCHAK, BANGKOK 10900
 IATA NO: 35307403
 INITIAL:
 TEL: 66 2 587 5050
 FAX: 66 2 911 1836
 EMAIL: sales@krisnatravel.com

DATE: 30APR2015
 ISSUING AIRLINE: QANTAS AIRWAYS (QF)
 TICKET NUMBER: 0819268183411
 NAME: CHANMUNGKALAKUL/SUPPHACHOK MR
 FREQUENT FLYER: -
 GALILEO RESERVATION: WQ11F4
 AIRLINE BOOKING CODE: 5AETYV (1A)

FROM / TO	FLIGHT	CL	DATE	DEP	FARE BASIS	NVB	NVA	BAG	ST
BANGKOK SUARNABHUMI INTL ARPT SYDNEY KINGSFORD SMITH	QF 24	ECON (Q)	23MAY	1825	QSTH	23MAY15	23MAY15	30 KG	OK
	TERMINAL: -			ARRIVAL: 24MAY 0645					
	TERMINAL: 1								
SYDNEY KINGSFORD SMITH ADELAIDE ADELAIDE ARPT	QF 739	ECON (S)	24MAY	0900	SWALKTH	24MAY15	24MAY15	30 KG	OK
	TERMINAL: 3			ARRIVAL: 24MAY 1040			SEAT: 022F		
	TERMINAL: 1								
ADELAIDE ADELAIDE ARPT SYDNEY KINGSFORD SMITH	QF 730	ECON (Q)	23AUG	0600	QSTH	23AUG15	23AUG15	30 KG	OK
	TERMINAL: -			ARRIVAL: 23AUG 0820			SEAT: 021A		
	TERMINAL: -								
SYDNEY KINGSFORD SMITH BANGKOK SUARNABHUMI INTL ARPT	QF 23	ECON (Q)	23AUG	0945	QSTH	23AUG15	23AUG15	30 KG	OK
	TERMINAL: -			ARRIVAL: 23AUG 1635			SEAT: 039K		
	TERMINAL: -								

ENDORSEMENT: CARRIER RESTRICTIONS APPLY/FEES APPLY/PENALTIES
 APPLY
 PAYMENT: CASH
 FARE CALCULATION: ROE32.506 XT 680QR145WG1470WY8160YQ
 TOUR CODE: -
 AIR FARE: THB
 TAXES/FEES/CHARGES: THB 700 TS 1425 AU 10455 XT
 TOTAL: THB

CARRIAGE AND OTHER SERVICES PROVIDED BY THE CARRIER ARE SUBJECT TO CONDITIONS OF CARRIAGE WHICH ARE HEREBY INCORPORATED BY REFERENCE.
 THESE CONDITIONS MAY BE OBTAINED FROM THE ISSUING CARRIER.

Krisnatravel

55 Moo Ban Chonnivet, Prachachuen Rd., Ladyao, Chattuchak,
Bangkok 10900

Contact: Ticket reservation

Tel: 662 587-5050 Fax: 662 911-1836

Email: sales@krisnatravel.com

Invoice No.

104651

Booking Ref.

Q8N8W2

Booking Date

29 Apr 2015

Confirmation Slip

This is **NOT** an E Ticket

MR. SUPPHACHOK CHANMUNGKALAKUL

Tel: +6627558396, +66909718870

Email: earthpangya@hotmail.com



Itinerary

23 May 2015

Departure	23 May 2015 18:25	Bangkok (BKK) Terminal -	Flight Details: Qantas Airways QF0024 Saturday, May 23, 2015	Economy (Q)	
Arrival	24 May 2015 06:45	Sydney (SYD) Terminal -	Duration: 9 hours 20 minutes Sunday, May 24, 2015 Total Time: 13:45	Airbus A330-300	
Departure	24 May 2015 09:00	Sydney (SYD) Terminal -	Flight Details: Qantas Airways QF0739 Sunday, May 24, 2015	Economy (S)	022F
Arrival	24 May 2015 10:40	Adelaide (ADL) Terminal -	Duration: 2 hours 10 minutes Sunday, May 24, 2015 Total Time: 13:45	Boeing 737-800	

23 Aug 2015

Departure	23 Aug 2015 06:00	Adelaide (ADL) Terminal -	Flight Details: Qantas Airways QF0730 Sunday, Aug 23, 2015	Economy (Q)	021A
Arrival	23 Aug 2015 08:20	Sydney (SYD) Terminal -	Duration: 1 hour 50 minutes Sunday, Aug 23, 2015 Total Time : 13:05	Boeing 737-800	
Departure	23 Aug 2015 09:45	Sydney (SYD) Terminal -	Flight Details: Qantas Airways QF0023 Sunday, Aug 23, 2015	Economy (Q)	039K
Arrival	23 Aug 2015 16:35	Bangkok (BKK) Terminal -	Duration: 9 hours 50 minutes Sunday, Aug 23, 2015 Total Time : 13:05	Airbus A330-300	

Disclaimer for future use:

- Class of service designators: Please note that some carriers use class of service designators different to the accepted IATA standards and the correct booking class will be verified at time of ticketing.
- In case of change date for traveling or change passenger name(s), fee will apply.

Price

Adult	Airfare	Tax	Total	
Booking Code: Q8N8W2				
CHANMUNGKALAKUL/ SUPPHACHOK	13,305.00	14,050.00	27,355.00	THB

• Information is correct at time of booking. Airfares and tax are subject to change depending on the ticket issue date.

• Please read all the terms and conditions.

