

IEEE Montreal Section

Expense Claim/Budget Request Form

Claimant's Full Name: O. LIBOIRON-LADOUCEUR Event Description: Technical Seminars (2)
 Address: 3480 UNIVERSITY ST. MONTREAL QC Event Date: June 17th & 18th
 Postal Code: H3A 2A7 Speaker: Prof. WOLKOW / Prof. CUK
 Phone: 514-398-6901 Chapter or Affinity: PH038
 email: odilo@p111.0-5 L31 form submitted? Yes
 Pay to the order of: O. LIBOIRON-LADOUCEUR

	Expense/Budget Description	Expense Date	Expense Amount	Expense Currency	Exchange Rate	Expense CAD
1	Beignes et cafe	6/17	48.69	CAD	—	48.69
2	" " "	6/27	48.69	CAD	—	48.69
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
Total Expenses						<u>97.38</u>
Personal Portion						<u>—</u>
Minus Cash Advances						<u>—</u>
Total Reimbursement						<u>97.38</u>

 July 2
 Claimant Signature Request Date June 2014

Chapter/Affinity Signature

Section Signature

Important Notes:

- 1- This form is to be used for claiming expenses and also requests for budget/cash.
- 2- Consult expense guidelines on the reverse of this page.
- 3- All the original receipts should be attached on A4 papers and submitted as well.
- 4- Debit Card and Credit Card receipts are not acceptable as proof of expense.
- 5- Please note that three different people should sign above.

Check Number	
Check Date	

MeetingReport was successfully created.

Title **The Role of Fast Charge Dynamics in Heterogeneous Catalysis by Transient Spectroscopy**

Event Category Technical

Event Sub-category Not Available

Description The ability to resolve the individual steps of a heterogeneous chemical reaction using rates determined directly by transient spectroscopy would inform theory and the design artificial photosynthetic systems. This talk will discuss how surface potential differentiates the kinetics of the first hole transfer in the water oxidation reaction from the subsequent steps in a model system, the n-SrTiO₃/water interface of a photo-electrochemical cell. The shape and magnitude of the activation barrier for the suggested reaction $h^+ + OH^- \rightarrow OH^*$ is found, along with a potential for the Nernstian equilibrium of OH^-/OH^* that is in rough agreement with gas phase photoemission studies. The talk will also discuss the transient spectroscopy of a more general type of artificial photosynthetic device, where hole injection from a photodiode into a catalyst over-layer initiates the reaction. This configuration allows one to investigate individual hole transfers of the water oxidation reaction in a range catalytic materials and with a tunable device that mimics applicable artificial photosynthetic systems.

Keywords Spectroscopy, photosynthesis

Guest Attendance 19

IEEE Member Attendance 4

Start Time 2014-06-27 15:00:00

End Time 2014-06-27 16:15:00

Time Zone Canada/Eastern

Location

Region 7

Section MONTREAL

OrganizationalUnit AP03/MTT17/PHO36

City Montreal

State/Province Quebec

Country Canada

1st Speaker

Topic The Role of Fast Charge Dynamics in Heterogeneous Catalysis by Transient Spectroscopy

Prefix Prof.
First Name Tanja
Last Name Cuk
Display Name Prof. Tanja Cuk
City Berkeley
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Submission Info

Created On 2014-07-02 18:45:55 UTC
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MeetingReport was successfully updated.

Title **Bulding Atom-Scale Circuitry**

Event Category Technical

Event Sub-category Not Available

Quantum dots are small entities, typically consisting of just a few thousands atoms, that in some ways act like a single atom. The constituent atoms in a dot coalesce their electronic properties to exhibit fairly simple and potentially very useful properties. It turns out that collectives of dots exhibit joint electronic properties of yet more interest. Unfortunately, though extremely small, the still considerable size of typical quantum dots puts a limit on how close multiple dots can be placed, and that in turn limits how strong the coupling between dots can be. Because inter-dot coupling is weak, properties of interest are only manifest at very low temperatures (milliKelvin). In this work the ultimate small quantum dot is described – we replace an “artificial atom” with a true atom - with great benefit.

It is demonstrated that the zero-dimensional character of the silicon atom dangling bond (DB) state allows controlled formation and occupation of a new form of quantum dot assemblies - at room temperature. Coulomb repulsion causes DBs separated by less than ~2 nm to experience reduced localized charge. The unoccupied states so created allow a previously unobserved electron tunnel-coupling of DBs, evidenced by a pronounced change in the time-averaged view recorded by scanning tunneling microscopy. It is shown that fabrication geometry determines net electron occupation and tunnel-coupling strength within multi-DB ensembles and moreover that electrostatic separation of degenerate states allows controlled electron occupation within an ensemble.

Some speculation on the viability of a new “atomic electronics” based upon these results will be offered.

As new technologies require new fabrication and analytical tools, a few words about robust, readily repairable, single atom tips will be offered too. This tip may be an ideal scanned probe fabrication tool. The same tip is an exquisite electron source – it exhibits 4x greater coherence than previous point sources. The same tip is evidently the best known He+ and Ne+ ion source also. It will enable a commercial critical dimension Ne+ Helium ion microscope and it may be the source in a non-staining ion machining tool.

Keywords Quantum dot, atomic electronics

Guest Attendance 15

IEEE Member Attendance 4

Invite Students true

Start Time 2014-06-17 14:00:00

End Time 2014-06-17 15:15:00

Time Zone Canada/Eastern

Location

Region 7
Section MONTREAL
OrganizationalUnit AP03/MTT17/PHO36
City Montreal
State/Province Quebec
Country Canada

1st Speaker

Topic Building Atom-Scale Circuitry
Prefix Prof.
First Name Robert
Middle Name A.
Last Name Wolkow
Display Name Prof. Robert A. Wolkow
City Edmonton
Country Canada
State/Province Quebec
E-Mail Address rwolkow@ualberta.ca
Organization University of Alberta

Submission Info

Created On 2014-07-02 18:31:53 UTC
Submitter ODILE LIBOIRON-LADOUCEUR
Submitter Email odile.liboiron-ladouceur@mcgill.ca

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Prof. WOLKOW
SEMINAR

Tim Hortons #2593
674 Rue Sherbrooke Ouest
Montreal, H3A 0B2
TPS # 1452 79 741 RT 0001
TVQ # 1205242178 TQ

Pour Emporter
Commande #
018365

2 12 Beignes 14,96
2 10 Tins Café 20,38

Sous-Total 44,36
TPS 1,47
TVQ 2,86
Total HST 4,33
Total 48,69
Visa No d'autoris=067973 48,69

2014/06/17

Pér. # 1 Périph. # 1

13:22:31
Trans # 528365

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servir aujourd'hui!
Merci de votre visite!
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a www.parlezatimhortons.com

Merci. Au plaisir de vous revoir!

TPS: 1,47 \$ TVQ: 2,86 \$

Total : 48,69 \$

PAIEMENT REÇU



2014-06-17 13:13:20 MEV:14673702-10318696
TIM HORTONS

674 RUE SHERBROOKE OUEST
674, RUE SHERBROOKE O MONTREAL

+ - Δ * - 5 - 7 8 9 0

Prof. Cuk SEMINAR

Tim Hortons #2593
674 Rue Sherbrooke Ouest
Montreal, H3A 0B2
TPS # 1452 79 741 RT 0001
TVQ # 1205242178 TQ

Pour Emporter
Commande #
023584

1 10 Tins Café 14,69
1 10 Tins Café 14,69
1 12 Beignes 7,49
1 12 Beignes 7,49

Sous-Total 44,36
TPS 1,47
TVQ 2,86
Total HST 4,33
Total 48,69
Visa No d'autoris=013155 48,69

2014/06/27

Pér. # 2 Périph. # 2

14:20:47
Trans # 963584

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TPS: 1.47 \$ TVQ: 2.86 \$

Total : 48.69 \$

PAIEMENT REÇU



2014-06-27 14:40:54 MEV:12781901-10956263
TIM HORTONS

674 RUE SHERBROOKE OUEST
674, RUE SHERBROOKE O MONTREAL

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