

ITS/749/2016-17
SCIENCE & ENGINEERING RESEARCH BOARD
(SERB)

5 & 5A, Lower Ground Floor,
Vasant Square Mall, Sector B, Pocket 5
Vasant Kunj, New Delhi
Delhi - 110070

Dated : 10/8/16

ORDER

Subject: Reimbursement of travel grant to "Mr. Sundara Murthy Mopurisetty, Research Scholar, D/o Electrical Engineering, Indian Institute of Technology Bombay, Mumbai - 400076 (Maharashtra)" for attending "43rd IEEE Photovoltaic Specialists Conference" held during 05-06-2016 to 10-06-2016 in Portland, Oregon, United States Of America.

Sanction of the Science & Engineering Research Board (SERB) is here by accorded to the payment of a sum of Rs. 123949/- (Rs. One lakh twenty three thousand nine hundred forty nine Only) for meeting the expenses incurred towards travel expenditure and registration fees for participating in the above International event.

2. Sanction of the grant is subject to the condition as detailed in Terms & Conditions available at website (www.serb.gov.in and <http://its.serb.gov.in>).
3. The expenditure involved is debitable to "Fund for Science & Engineering Research (FSER) "
4. This grant is being reimbursed under the ITS scheme
5. The Sanction has been issued with the approval of the competent authority under delegated powers and vide Diary No. SERB/F/2774/2016-17 dated 04-08-2016
6. The amount of Rs. 123949/- (Rs. One lakh twenty three thousand nine hundred forty nine Only) will be drawn by the Finance & Budget Officer of the SERB and will be disbursed to Registrar, Indian Institute of Technology Bombay, Powai, Mumbai - 400076 by means of RTGS/NEFT transaction as per their Bank details given below:

Name of A/C Holder	The Registrar, IIT Bombay
Bank Name & Branch	State Bank of India, IIT Powai Branch
Account No.	00000010725729128
IFSC/RTGS Code	SBIN0001109
Applicant's E-Mail	sundara.mopury@gmail.com
A/c Holder's E Mail	registrar@iitb.ac.in

Cont... 2/-

7. It is certified that original boarding passes have been received along with travel expenditure and registration fees documents and retained in the Board.
8. In the eventuality of any excess payment arising on account of typographical errors, etc., the excess amount should be refunded immediately to the Science and Engineering Research Board (SERB) by way of an a/c payee cheque in favour of the "Fund for Science & Engineering Research ". Non-compliance would lead to the SERB initiating recovery procedures which would also attract applicable penal interest which would be decided by the SERB.
9. In case of any discrepancy you may contact **ITS Section** at ms.its@serb.gov.in

Monika Agarwal
(Monika Agarwal)
Scientist-E

To,

Finance & Budget Officer
SERB, New Delhi

Copy forwarded for information and necessary action to: -

1.	The Principal Director of Audit, A.G.C.R.Building, IIIrd Floor I.P. Estate, Delhi-110002
2.	Sanction Folder, SERB, New Delhi.
3.	File Copy
4.	Mr. Sundara Murthy Mopurisetty Research Scholar D/o Electrical Engineering Indian Institute of Technology Bombay Mumbai, Maharashtra - 400076 Email:sundara.mopury@gmail.com
5.	The Registrar Indian Institute of Technology Bombay Mumbai, Maharashtra - 400076 Email:registrar@iitb.ac.in

Monika Agarwal
(Monika Agarwal)
Scientist-E



Science and Engineering Research Board

International Travel Support Scheme

Established through an Act of Parliament: SERB Act 2008, Department of Science & Technology, Government of India

Mr. Sundara murthy Mopurisetty, Applicant

Claim Form

Application File No. - ITS/749/2016-17

Personal Details

Applicant Name: Mr. Sundara murthy Mopurisetty
Date of Birth: 25-06-1981 (dd-mm-yyyy)
Email Address: sundara.mopury@gmail.com
Gender: Male
Designation: Research Scholar
Department: Electrical Engineering
Address: Indian Institute of Technology Bombay, Powai,,
 Mumbai, MAHARASHTRA, 400076
Mobile : 8121884724
Whether (Sr. Scientist or Young Scientist): Young Scientist
Name of the Event: 43RD IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE
City & Duration of the Event: PORTLAND, OREGON , UNITED STATES OF AMERICA, 05-06-2016 To 10-06-2016
Date of leaving India : 03-06-2016
Date of return to India : 12-06-2016
Passport No. : G9664616

Tour Technical Details

Academic highlights & new developments presented at the Event (200 Words):

On first day attended a tutorial session on, "Silicon solar cell technology: Design, device physics, and characterization." Discussed device physics in crystalline silicon solar cells, design methodology and characterization techniques. Second day in session, attended the various plenary lectures on perovskite solar cells, Quantum dot solar cells and potential induced degradation in p-type c-Si solar cells. In the evening session, Oral presentations on "Advances in Chalcogenides Solar Cells" were attended. On third day, plenary sessions on "Wild Band Edges in Chalcogenide Devices, Solar Energy Forecasting." be presented. In Poster session, interacted with researchers working on Light Management, module reliability and perovskite solar cells. On Fourth day, plenary lectures on photo-luminescence studies, rooftop and space systems; few oral sessions on Characterization of c-Si and mc-Si, presented my poster and interacted with the conference colleagues and gathered feedback. On fifth day of the conference, plenary lectures on Mass production of high efficiency p-type PERC solar cell; posters on Passivation & Contact Formation, PV Field Performance and Monitoring attended. Superb platform to know huge information about trends in Photo-voltaic systems and to interact with eminent people. Thanks a lot to Department of Science and Technology, Government of India, for providing this opportunity.

Applicant's Contribution at the Event (200 words):

Attended tutorial classes on beginning day, plenary lectures from the best scientists around the globe, Oral and poster presentations. We presented a TCAD simulation deck for Cu₂ZnSnS₄ (CZTS) solar cells that is calibrated to data from the best reported experimental device structure on Wednesday. The calibration is performed by matching the experimental external quantum efficiency (EQE) and current density vs. voltage (J-V) characteristics with those obtained from combined optical and electrical simulations. We used electrical and optical parameters from the literature and best reported experimental device structure. We find that using theoretically calculated extinction coefficient (k) values in the simulation leads to large discrepancy with experiment; on the other hand, experimentally measured k-values for bulk CZTS need only modest modification (at near-bandgap) in order to be able to fit the EQE data for the device-structured CZTS that we have here. Further, we studied the effect of series resistance (R_s), Carrier lifetime (τ), surface recombination velocity (SRV) effect at CZTS/CdS, CZTS/Mo interface and replacement of AZO with novel materials like graphene, reduced graphene oxide (rGO). This calibrated deck can be used further for future predictive device modelling and plasmonic solar cell simulations.

Visits to other Scientific Institutions / Universities during participation in the Event, if any (200 words):

Visited industrial exhibition and scientific characterization tools exhibition at the conference.

Details of Account Holder & Bank (Please provide the signed copy of institute account details)

Name of Account Holder *: Registrar
Bank Account Number : 10725729128
Account Holder Address*: The Registrar, IIT
 Bombay, Powai,
 Mumbai-400076
Account Holder Email : registrar@iitb.ac.in
Bank Name *: State Bank of
 India
Branch Name *: IIT Powai Branch
 IIT Main Gate,
 Adishankaracharya
 Marg, Powai,
 Mumbai
Bank Address with city :

State *: MAHARASHTRA
 PinCode *: 400076
 Type Of Bank Account(SB/Current/etc.) *: Current
 IFSC/RTGS Code of Bank *: SBIN0001109

Expenditure incurred By Applicant

Item Type	Ticket No.	Mode of Transport	Name of Airlines/ Trains/Bus/etc.	Name of Airlines	Amount (In Rs.)
Fare	0982117109863-864	Air	Economy	Air India/Its alliance	96209.0
Visa Fees					0.0
Registration Fees					27740.81
Total					123949.81

Details of the Travel

Ticket No.	From Date	From Place	To Date	To Place
0982117109863-864	03-06-2016	BOM, Mumbai	05-06-2016	PDX, Portland
0982117109863-864	11-06-2016	PDX, Portland	13-06-2016	BOM, Mumbai

Amount received from other sources:

Agency Name	Travel (In Rs.)	Visa (In Rs.)	Registration (In Rs.)
Total	0	0	0

Claim Upload Files

CASH RECEIPT: [CASH RECEIPT](#)
 BOARDING PASSES: [BOARDING PASSES](#)
 ACCOUNT DETAILS: [ACCOUNT DETAILS](#)
 REGISTRATION RECEIPT: [REGISTRATION RECEIPT](#)
 PARTICIPATION CERTIFICATE: [PARTICIPATION CERTIFICATE](#)
 MISCELLANEOUS UPLOAD: [MISCELLANEOUS UPLOAD](#)
 TICKETS: [TICKETS](#)

Certified that I have attended the above international scientific event and the particular furnished above are correct. I also certify that I have not received travel grants from SERB during the last three years.

Date :

Signature of
Applicant

Place :