Government of India
Department of Atomic Energy
Board of Research in Nuclear Sciences (BRNS)

BRNS Secretariat,
First Floor, CC,
BARC, Mumbai-400 085.

No.2010/36/89-BRNS/ 10945

Date: 3 OCT 2016

Sub: Forwarding of bill/s to Accounts

Bill No.	Date	Amount	In favour of
36069	27.09.2016	Rs.74,76,368/-	"A/c No.10725729173; IFSC : SBIN0001109; Name of A/c Holder: IIT Bpmbay Project & Consultation; Bank & Branch: SBI, IIT Bombay, Powai Branch

Full particulars of the bill/s

R/P entitled "Development of techniques and tools for formal verification of computer systems with improved precision and scalability" under Prof. Supratik Chakraborty.

Grant for the year **2016-17**		Rs.78,90,000/-
Deducted unspent balance	Technical Assistance	Rs. 82,090/-
	Travel	Rs. 35,997/-
	Contingency	Rs. 2,95,545/-
	Total :	**Rs.74,76,368/-**

Unspent balance under head Equipment (32,57,180) and Consumable (26,804) are allowed to carry forward to the current financial year 2016-17.

It is requested that the payment may be made by **e-transfer** on priority basis and in any case not later than 20 days from the date of receipt in accounts under intimation to **BRNS Secretariat.**

Encl: Bill/s.

Debanik R

(Dr. Debanik Roy)
Programme Officer, BRNS

Assistant Accounts Officer (Cheque), DAE.

Copy to:
1. Registrar, Indian Institute of Technology-Bombay, Mumbai 400 076 .
2. Principal Investigator : Prof. Supratik Chakraborty, Centre for Formal Design and Verification of Software (CFDVS), Department of Computer Science and Engineering, Indian Institute of Technology-Bombay, Mumbai 400 076.
3. Member Secretary, NRFCC : Dr. Vivekanand Kain, Head, MP&CED, BARC, Mumbai-400 085.
4. Principal Collaborator : Dr. Anup K. Bhattacharjee, SO/H, Reactor Control Division, BARC, Mumbai 400 085.

Government of India
Department of Atomic Energy (DAE)
Board of Research in Nuclear Sciences (BRNS)

Dr. Debanik Roy
Programme Officer (NRFCC)

BRNS Secretariat, 1st Floor, CC,
BARC, Trombay, Mumbai-400085.
Phone: +91-2225593946
Fax: 2225593946
Email: deroy@barc.gov.in

Date: 26/09/2016

No: 2010/36/89-BRNS/36062 -A

OFFICE MEMORANDUM

Sub: Terminal grant-in aid for the year **2016-2017**, for the R/P entitled **"Dev of Techniques&Tools for Formal Verificn of Computer Systems with Improved Precision &Scalability"** under Prof. Supratik Chakraborty, Centre for Formal Design and Verification of Software (CFDVS), Deptt. of, Indian Institute Technology-Bombay,Powai, Mumbai,Maharashtra-400076. bearing sanction **2010/36/89-BRNS** with NRFCC, BRNS.

In continuation of this Department letter of even number dated **26/09/2016**, on the recommendations of the Board of Research in Nuclear Sciences (BRNS), I am pleased to convey the administrative approval of the President of India for the continuance of captioned project during 2016-2017 and sanction to incur an expenditure of **Rs. 78,90,000/- (Rupees seventy eight lakh ninety thousand only)** as detailed below:

Item of expenditure*	Year 4 & 5 **(2016-2017)**
Equipments	1380000
Scientists (2)	3000000
Engineers (2)	1500000
Technical Assistance	1310000
Consumables	200000
Travel - PI	100000
Contingencies	300000
Overheads	100000
Total(INR)	**7890000**

Date of Termination of the Project : **31/03/2017.**

2. The grant remaining unspent under the Heads "Equipments","Consumables" and "Overheads" for the year 2014-15 and 2015-16 are allowed to be carried forward to the current financial year 2016-2017.

3. The expenditure involved is debitable to the following Head of Account: **04 3401 00 004 27 02 31**

4. This issues with the concurrence of Scientific Secretary, BRNS and IFA.

*Combined grant for IVth and Vth year.

sd/-
Debanik Roy
Dr. Debanik Roy

Pay & Accounts Officer, DAE,Mumbai-400 001.

Copy forwarded to:

1. Director of Audit, Scientific Department, AEAP, OYC, CSM Marg, Mumbai-400 001.
2. Join Secretary (R&D), DAE, Anushakti Bhavan, CSM Marg, Mumbai-400 001. rd2@dae.gov.in
3. Registrar, Indian Institute Technology-Bombay,Powai, Mumbai,Maharashtra-400076.
4. Principal Investigator(PI): Prof. Supratik Chakraborty, Centre for Formal Design and Verification of Software (CFDVS), Deptt. of, Indian Institute Technology-Bombay,Powai, Mumbai,Maharashtra-400076.

A. In accordance with Rule 30 of the General Financial Rules 2005, this sanction will lapse if no payment in whole or part is made during a period of twelve months from the date of issue of this sanction letter.

B.Grant for the terminal year will be released in FULL (unspent balance of previous year and Interest earned will be adjusted) on receipt of the CLAIM IN DUPLICATE in prescribed FORM-II along with the following documents.The data for these documents are required to be filled online and a printout of the same should be forwarded to the undersigned after obtaining original signatures of the concerned officials.

(a) Utilization Certificate for the preceding year.

(b) Statement of Accounts signed by Internal Auditor/ Accountant of the Institution/ University for the preceding year. Interest earned in previous year should be reflected in the Statement of Accounts.

(c) Copy of appointment order and joining report of the staff appointed for the project along with Minutes of the Selection Committee.

(d) An inventory of equipment including copy of the Purchase order.

C. PLEASE NOTE THAT CLAIM(S) SHALL BE SUBMITTED TO THIS DEPARTMENT WELL IN ADVANCE BEFORE THE END OF THE FINANCIAL YEAR IN WHICH THE CLAIM IS DUE. OTHERWISE, THE SANCTIONED GRANT WILL BE LAPSE.

D. The balance of Overhead grant shall be released after on receipt of the CLAIM in duplicate in prescribed FORM-II along with the following documents within 6 months from the date of termination of the project:

(1) Consolidated AUDITED Statement of Accounts from a Statutory Auditor (Govt. Auditor) or a Chartered Accountant for the grant-in-aid paid during the previous years (Form-IV).

(2) AUDITED Utilization Certificate to the effect that grant received during the years were utilized for the purpose for which they were sanctioned.

(3) An inventory of equipment in An inventory of equipment, including copy of the Purchase orders.

(4) Three hard copies of the final consolidated Project Completion Report (PCR).

(5) Uploading of soft copy of the PCR and two page brief report through the website.

E. If the claims are not received within the stipulated period, it will be presumed that the Investigator has no further claim, and the file will be closed.

F. The grant remaining unutilized, if any, may be refunded vide DD drawn in favour of "Pay & Accounts Officer, DAE, Mumbai" and sent to BRNS Secretariat alongwith documents listed at para (D) above. The unutilized grant may be refunded in whole rupees by rounding off the amount to the nearest rupee.

G. Attention is also invited to the procedure regarding publication of papers (vide para 9 of the Annexure to the "Terms and Conditions" already sent to you alongwith first year sanction letter), the above has been classified as Unreserve for the purpose of the publication of results of the work.

5. AAO (Cheque), DAE, Anushakti Bhavan, CSM Marg, Mumbai-400 001.
6. Member Secretary (NRFCC) : Dr. Vivekanand Kain, vivkain@barc.gov.in; Ph:+91-2225595067.
7. Co-Investigator (CI) : Paritosh K. Pandya, School of Technology and Computer Science, Tata Institute of Fundamental Research, Homi Bhabha Road, Colaba, Mumbai 400005, Email : pandya@tcs.tifr.res.in, Mobile :9892106060G. Sivakumar, Dept of Computer Science and Engineering, IIT-Bombay, Mumbai.
8. Principal Collaborator (PC): Dr. Anup K. Bhattacharjee, Reactor Control Division Bhabha Atomic Research Centre Mumbai 400085, Email : anup@barc.gov.in, Mobile :9969453732.

Debanik Roy

Dr. Debanik Roy

Note:

1. Please quote the Sanction Number 2010/36/89-BRNS in all your correspondence with BRNS.
2. All the forms mentioned in the sanction letter and the terms & conditions are also available on the website. Kindlyupdate Statement of Accounts, details of Equipment and staff in the menu available on the leftside when viewapplication is clicked. The renewal/extension forms and scanned copy of duly signed financial documents(SA,UC & claim) also needs to be uploaded to get grant for subsequent years. Kindly verify that the data given in your profile is correct.

सत्यमेव जयते
Government of India
Department of Atomic Energy (DAE)
Board of Research in Nuclear Sciences (BRNS)

Dr. Debanik Roy
Programme Officer (NRFCC)

BRNS Secretariat, 1st Floor, CC,
BARC, Trombay, Mumbai-400085,
Phone: 25593946 FAX: 022-25505151,
E-mail: deroy@barc.gov.in

No. 2012/36/51-BRNS/ 11507 Date: 12 OCT 2017

Sub: R/P entitled "Improving coverage of test-suites via automatic test-case generation" under Prof. Subhajit Roy, Indian Institute of Technology-Kanpur, Kanpur 208 016.

This has reference to your email dated 16.02.2017 regarding ending of project term on 31.03.2017 and request for four months extension at no extra cost on the captioned subject.

Please be informed that the project has completed four years as on 31.03.2017. Hence, you are requested to submit the following documents immediately to close the case file:

i. Claim Form-II in duplicate, if any;
ii. Consolidated AUDITED Statement of Accounts from a Statutory Auditor (Govt. Auditor) or a Chartered Accountant (External) for the grant-in-aid paid including bank interest accrued during the previous years (Form.IV);
iii. Consolidated Utilisation Certificate to the effect that grant received including bank interest accrued during the years were utilised for the purpose for which they were sanctioned (Form.III);
iv. A Final consolidated Project Report 6 hard-bound copies and 2 soft copies in 2 CDs;
v. Demand Draft in favour of Pay and Accounts Officer, DAE, in case of unspent balance;
vi. Staff details i.e. copy of office order, joining report and miunutes of the selection committee and
vii. Inventory of Equipment (Form-V).

The matter may be treated urgent.

Debanik R

(Dr. Debanik Roy)
Programme Officer, BRNS

Prof. Subhajit Roy,
Indian Institute of Technology-Kanpur,
Kanpur 208 016.

Copy forwarded to:

1. Registrar, Indian Institute of Technology-Kanpur, Kanpur 208 016.
2. Member Secretary, NRFCC : Dr. Vivekanand Kain, Head, MP&CED, BARC, Mumbai-400 085.
3. Member Secretary, TSC-3, NRFCC : Dr. S. R. Shimjith, RCnD, BARC, Mumbai-400 085.
4. Principal Collaborator : Dr. A.K. Bhattacharjee, RCnD, BARC, Mumbai 400 085.
5. Co-Principal Investigator : Prof. Amey Karkare, Indian Institute of Technology-Kanpur, Kanpur 208 106.

3.7.1 Collaborative Activities

3.7.1 Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship per year

Sl. No.	Title of the collaborative activity	Name of the collaborating agency with contact details	Name of the participant	Year of collaboration	Duration	Nature of the activity	Link to the relevant document
1	Exploring chemical 'de-priming' and quantitative genetics to improve growth and yield of soybean under abiotic stress.	Department of Biotechnology, Ministry of Science & Technology (Govt. of India), Room No. 814, 8th Floor, Block- 2, CGO Complex, Lodhi Road, New Delhi – 110003	Dr. Ashish Kumar Srivastava	2019	1 years	R& D	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
2	Functional characterization of natural and synthetic derivatives of deinoxanthin for their antioxidant and radioprotective effects using Caenorhabditis elegans and mouse model systems	Madurai Kamraj University	Prof. V Padmini	2018	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
3	Metabolic engineering of plants with stress tolerance phenotypes of D. radiodurans	G B Pant University of Agriculture and Technology, Udham Singh Nagar, UKD	Prof. N K Singh	2018	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
4	Palladium complexes with Hybrid Organochalcogen Ligands as Homogeneous Catalysts in C-C coupling Reactions	Institute of Chemical Technology, Matunga	Prof. B. M. Bhanage	2018	3 years	Collaborative research	https://doi.org/10.1002/slct.201901930
5	Structure, Spectroscopy and Reactivity of Low Dimensional System	IACS, Kolkata	Prof. Ayan Dutta	2015	3 years	R & D	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
6	Electronic structure and transport properties of inorganic-organic nanocomposites	Visva Bharati University, Shantiniketan	Prof. Pranab Sarkar	2018	3 years	R & D	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
7	M. Pharm Project work	VES College of Pharmacy	Mr. Devendra Madan	2016	0.6 Years	Project work	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
8	M. Pharm Project work	VES College of Pharmacy	Ms. Yasmeen Rawoot	2016	0.6 Years	Project work	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
9	B. Pharm Project	VIT Vellore	Ms. Ekta Rati	2016	0.5 Years	Project work	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
10	Indian Academy of Sciences Joint Summer Research Fellowships	IIT Kharagpur	Mr. Soumabrata Majumdar	2017	0.7 Years	Internship	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
11	Indian Academy of Sciences Joint Summer Research Fellowships	VIT Vellore	Ms. Anlin Shaju	2018	0.7 Years	Internship	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
12	Indian Academy of Sciences Joint Summer Research Fellowships	Central University of Kerala	Mr. K. K. Supin	2019	0.7 Years	Internship	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
13	Indian Academy of Sciences Joint Summer Research Fellowships	Savitribhai Phule Pune University	Dr. S. D. Kulkarni	2019	0.7 Years	Internship	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
14	Development of Lanthanum Gallate electrolyte based electrochemical sensors for monitoring NH_3 and H_2S in air	VIT University, Chennai, Vandalur-Kelambakkam Road, Chemmai-600127.	Atanu Dutta, Professor, Department of Physics, School of Advanced Sciences, VIT, Chennai.	2014	4 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
15	Development of porous nanocarbon electrodes for alkaline fuel cells	Shivaji University, Kolhapur, 416004.	Dr. A. V. Maholkar, Department of Physics, Shivaji University, Kolhapur 416004.	2013	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
16	Sodium-ion battery development based on polyanion-based cathode and hard carbon anode	Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai – 400076	Prof.Sagar Mitra	2018	3 Years	Research collaboration	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
17	Development of Na-ion battery using glass based anode and cathode materials	Department of Physics School of Technology GITAM University Hyderabad	Dr. R. Balaji Rao	2018	3 Years	Research collaboration	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
18	Magnetic and transport properties of functional nano sized Fe and Cr based spinels	Department of Physics, Mohanlal Sukhadia University, Udaipur Rajasthan 313 001	Dr. N. Lakshmi	2013	3 Years	Research collaboration	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
19	DMRIT students (Sponsored candidates)		Shri Aditya Narain Tiwari, Shri Gautam Das, Smt. T.S. Dalvi, Shri Sofi Zahoor Ahmad, Smt. Yakkala Venkata Supraja, Shri Kotte Rajakumar, Shri Aneesh A, Shri Amol DharmajiKhopade	2014	5 years	NA	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc

Md. Yusuf 14.8.2020

Prof. S. M. Yusuf
Dean Students' Affairs
Bhabha Atomic Research Centre
Homi Bhabha National Institute
Mumbai 400085

	Development of single domain antibody for human Tg (NRCC-BARC)		J.Kumarasamy Dr. Savita Kulkarni, Dr. Ghorui SK Dr. Sharmila Banerjee	2015	5 years	NA	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
20	Immunoassay development for measurement of T4 in Chicken serum		J.Kumarasamy& Prof. Santosh Dalvi	2018	0.6 Years	DOI 10.5455/ijlr.20171221125306	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
21	Production of polyclonal antibodies against thyroglobulin (Tg) for the production of in-house Tg IRMA kits.		Dr. S. Banerjee Dr. S. Kulkarni Shri. J.Kumarasamy Smt. C. S. Gholve Dr. N.V. Patil Dr. S.K.Ghorui	2015	5 years	Total Abstracts -3 [ACBI-2, & TMH workshop-1]	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
22	Study on anticancer activity of vincristine- berberine combination in vitro and in vivo		Ms. Suchitra Godhia, Dr. AvikChakraborty ,Dr Yogita Pawar, Dr. Krishna R. Iyer , Dr. Archana Damle, Dr (Smt). S. Banerjee	2018	2 Year		www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
23	Formulation and evaluation of vascular drug delivery system of poorly water soluble drug-Lopinavir		Dr.ManiyarMithun, Dr. Avik Chakraborty, Dr. Ashok Chandak, Dr. Kokare Chandrakant	2017	2 Years	DOI: 10.1080/08982104.2019.1634723	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
24	Development of Stevioside encapsulating Phytosomes for tumor targeting.		Ms. Sayali. Kadam. Dr.Swapna.Nabar, Dr.Avik.Chakraborty, Dr. Yogita Pawar	2016	1 Year		www.hbni.ac.in/haac/C3/m3_7_1/c371-SuppDoc-barc
25	Evaluation of anti-Leishmania effects of G1-4A		Dr P.K.Gupta Dr Savita Kulkarni Dr Shubhankar Singh (RMRIMS, Patna)	2018	Ongoing	Nil	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
26	Evaluation of Rif-CMN nano particles on intracellular clearance of *Mycobacterium tuberculosis*		Dr P.K.Gupta Dr Savita Kulkarni Ms Priyanka Jahagirdar , Dr Padma Devrajan	2016	3 Years	Abstracts : 03 Publication: 01 DOI: 10.1002/btm2.10112	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
27	Development and characterization of surface modified nanoparticles for the treatment of brain cancer		Mr. Vikas Pandey, Prof. Vandana Soni Dr. Ashok Chandak , Dr Avik Chakraborty Dr Sharmila Banerjee	43525	1 Year		www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
28	Fluoride contamination in groundwaters Odisha, India : exploring the hot spring link through Environmental Isotopes, geological, geophysical and geochemical studies	Department of Geology and Geophysics IIT Kharagpur	Dr. Saibal Gupta	2017	3 Years	Isotope Hydrology	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
29	An Integral assessment of groundwater and surface water using stable isotopes of water	Dept of Civil Engineering, Indian Institute of Technology Indore	Dr. Manish Kumar Goyal	2017	3 Years	Isotope Hydrology	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
30	Estimation of snow melt, ice melt, rainfall-runoff and base flow contributions to the Chhota Shigri stream in Himachal Pradesh using environmental isotopes	School of Environmental Sciences, Jawaharlal Nehru University New Delhi-110067	Dr. A.L. Ramanathan	2015	3 Years	Isotope Hydrology	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
31	Nanoparticles for cancer therapy	Dr.MuniraMomin Principal and Professor Department of Pharmaceutics Gate no. 1, Mithibai College Campus, V. M. Road, Vile Parle (West), Mumbai 400056, Maharashtra, India Telephone: +91 22 42332052 Fax: +91 22 26132905	R. S. Ningthoujam	2017	3 Years	Therapy	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
32	Development of highly porous, nanostructured metal/mixed metal oxide spheres for removal of arsenic	BIT, Mesra, Ranchi	Dr. Sanjay Kumar Swain, BIT Mesra	2016	4 Years	Synthesis, characterisation and application of novel sorbents for remediation of Arsenic.	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
33	Powder Electroluminescent Devices from Oxide Nano materials	Dept. Of Physics, Government College(A),; Rajamahendravarm 533105, East Godavari District, Andhra Pradesh	Dr. K. Ramachandra Rao	2015	3 Years	R&D on electro luminescent materials	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
34	Rare earth doped perovskite based nanophosphors for white LED application	NGM College, Pollachi, Coimbatore, Tamil Nadu	Dr. P. Christopher Selvin	2015	3 Years	Development of phosphors	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
35							

Md. Yusuf 14.8.2020

Prof. S. M. Yusuf
Dean Students' Affairs
Homi Bhabha National Institute
Mumbai 400085

36	National consortium on "Generation Of Solar Hydrogen"	IIT –Kanpur, IIT- Madras, IIT-Jodhpur, DEI –AGRA, CECRI, Karaikudi	Atindra Mohan Banerjee (one of the participant)	2012	3 years	DST funded national consortium on activities related to generation of hydrogen utilising solar energy with participants from: IIT- Kanpur, IIT-Chennai, CECRI-Karaikudi, DEI, AGRA, IIT-Jodhpur and BARC, Mumbai. A. M. Banerjee contributed in studies related to photocatalytic and thermochemical methods of hydrogen generation.	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
37	Production and Storage of Nuclear Hydrogen	Canadian National Laboratories (CNL), Canada	Atindra Mohan Banerjee (one of the participant)	2015	3 Years	BARC-CNL collaborative project on production and storage of nuclear hydrogen. A. M. Banerjee contributed in Cu-Cl thermochemical cycle activities.	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
38	National consortium on "Generation Of Solar Hydrogen"	IIT –K, IIT- Chennai, IIT-J, DEI –AGRA, CECRI, Karaikudi	Mrinal R. Pai, PI, Leading Coordinator was IIT-K	2012	2 Years	It was a national consortium in which BARC is one of the participating institutes along with other institutes mentioned here. BARC contributed in photocatalytic and thermochemical methods of hydrogen generation. work highlights are uploaded by DST in link attached here	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
39	Synthesis and Characterization of Novel Metal Oxides for Solar Hydrogen Generation via Photoelectrochemical/Photocatalytic Splitting of Water	DEI-AGRA	Mrinal R. Pai, PC	2013	3 Years	Development of materials for photocatalytic and photoelectrochenical methods and their activity. DEI, Agra students visited BARC several times	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
40	Development of new Heterogeneous Porous Catalysts and their use for the preparation of fine chemical	Kalyani University, West Bengal	Mrinal R. Pai, DC	2018	3 Years	Synthesis and characterization of porous catalysts and evaluation of their activity for various organic reactions	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
41	Production and Storage of Nuclear Hydrogen	Canadian National Laboratories (CNL), Canada	Mrinal R. Pai	2015	3 Years	Studies on individual steps of Cu-Cl thermochemical cycle	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
42	Ligand coated soft materials for adsorptive separation of Gd^{3+} and UO_2^{2+} ions	Chemical Engineering Department, IIT Kanpur	Dr. Jayant K Singh Dr. Sk. Musharaf Ali Shri K.T. Shenoy	2016	3 Years	Ligand coated soft materials for adsorptive separation of Gd^{3+} and UO_2^{2+} ions	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
43	Quantum Chemical Understanding of Solvent Extraction Mechanism of Metal Ions in Novel Ionic Liquid Medium	Chemical Engineering Department, IIT Gowahati	Dr. Tamal banerjee Dr. Pallab Ghosh Dr. Sk. Musharaf Ali	2013	3 Years	Quantum Chemical Understanding of Solvent Extraction Mechanism of Metal Ions in Novel Ionic Liquid Medium	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
44	A computational investigation on the reaction paths and spectroscopic properties of crown ethers	Chemistry Department, BITS, GOA	Dr. Anjan Chattopadhyay Dr. Sk. Musharaf Ali Dr. S. Mukhopadhyay	2019	3 Years	A computational investigation on the reaction paths and spectroscopic properties of crown ethers	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
45	Indo-German Bilateral Research Project	Institute of Nuclear Chemistry, Johannes Gutenberg University, Mainz, Germany	Sudipta Chakraborty	2018	1 Year	Research on Targeted bisphosphonates for delivery of secondary drugs in nuclear medicine	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
46	Nano materials modified electrodes for electrochemical sensing application	Karnataka University, Dharwad, Prof. J. Seetharamappa	Dr. A.K.Satpati	2012	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
47	Preparation and characterization of stable nano-crystalline p-type Cu2O semiconductors modified with different metal doping for their application in photoelectrochemical water splitting for hydrogen generation	IIEST, Shibpur, with Prof. C. Bhattacharya	Dr. A.K.Satpati	2013	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
48	Development of electrochemical sensors for biomedical apflications by modiffing carbon paste electrodes using new generation materials	St. Joseph's college with prof. R. Mascarenhas	Dr. A.K.Satpati	2014	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc

Md Yusuf 14.8.2020

प्रो. एस. एम. युसुफ / Prof. S. M. Yusuf
डीन स्टूडेंट अफेयर्स / Dean Students' Affairs
भाभा परमाणु अनुसंधान केंद्र / Bhabha Atomic Research Centre
होमी भाभा राष्ट्रीय संस्थान / Homi Bhabha National Institute
मुंबई ४०००८५ / Mumbai 400085

49	Production and Storage of Nuclear Hydrogen	Canadian Nuclear Laboratories Ontario, Canada	BARC -Dr. S.R. Bharadwaj Dr. A.K. Tripathi Dr. V. Sudarsan Dr. (Ms) B.N. Wani Dr. Salil Varma Mr.AjitShirsat Ms.BandhanSaha Dr. (Ms) Mrinal Pai Dr. A.M. Banerjee Mr. Deepak Tyagi Dr. (Ms) Seemita Banerjee Ms.PriyankaRuz Mr.Asheesh Kumar Dr. P.P. Kulkarni Mr.ArunPooleery; CNL-Dr. Sam Suppiah Dr.NirmalGnanapragasam Dr.Hongqiang Li Dr. Donald Ryland Dr. Lorne Stolberg Dr. Adrian Vega	2015	3 Years	Hydrogen Generation from High Temperature Steam Electrolysis; Studies Related to Hydrogen Storage; Hydrogen Generation from Copper – Chlorine (Cu-Cl) Thermochemical Cycle	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
50	Evaluation of doped Cerate-zirconate and doped indate protonic electrolyte materials for Innovative Dual membrane Solid oxide fuel cells.	Institute for Energetics and Interphases, Genova Department, National Research Council, Via De Marini, 6 – 16149 Genova, ITALY	Dr. Massimo Viviani	2013	2 Years	Development of newer proton conducting oxides as electrolytes.	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
51	Collaborative DST project	Investigation of radicals in the co-ordination sphere of metals using different cyclo-alkyl amino carbenes and their applications in the activation of small molecules	Dr. Rohit Singh Chauhan	2017	3 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
52	ICT-HWB-BARC project	Extraction &Deuteration of Natural Products of Therapeutic Importance for Improved Potency	Prof. Joshi, ICT Prof.Laddha, ICT Dr. A. Verma, HWB	2018	2 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc
53	ICT-HWB-BARC project	Modified novel deuterated amino acids and small molecules for possible increase of lifetime of an active drug	Prof. Joshi, ICT Dr. A. Verma, HWB	2018	2 Years	Collaborative research	www.hbni.ac.in/naac/C3/m3_7_1/c371-SuppDoc-barc

Md Yusuf 14.8.2020

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