# **Indian Institute of Teacher Education, Gandhinagar.**

# **Grants for the Research projects**

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Revathy Vishwanath
Deputy Director
RP Division Incharge
Tel #011-26716690
E-mail: mmp2016rpr@gmail.com

Indian Council of Social Science Research (Ministry of Human Resource Development) JNU Institutional Area, Aruna Asaf Ali Marg New Delhi – 110067

Website: www.icssr.org

#### SANCTION ORDER

F.No. 02/10/2019-20/MJ/RP

Dated: 15-01-2020

The Registrar, The M S University of Baroda, Pratap Gunj, Vadodara, Gujarat-390002.

Subject:

Sanction of Major Research Project entitled "Construction and Standardization of Work Place Happiness Scale for teachers." to Dr. R C Patel

Dear Sir,

- The Indian Council of Social Science Research (ICSSR) considered the above major research project submitted by Dr. R. C Patel, Professor in Education, Pratap Gunj, Vadodara, Gujarat, Pincode-390002. Co-Project Directors of the study are: a. Dr. Jyotsna Amin, Assistant Professor, Pratap Gunj, Vadodara, Gujarat, Pincode-390002, b. Dr Sudhir tandel, Assistant Professor, Pratap Gunj, Vadodara, Gujarat, Pincode-390002.
- 2. The study, as proposed by the researcher, is to be located at and financially administered by your institution as per the guidelines of this award.
- 3. The ICSSR has sanctioned a grant-in-aid of Rs. 07, 75,000/- (Rupees Seven Lakh and Seventy Five only) for the above research project and the grant will be released as follows:

 First instalment
 :Rs. 3,10,000/ 

 Second instalment
 :Rs.,2, 32,500/ 

 Third instalment
 :Rs. 1,55,000/ 

 Fourth Instalment
 :Rs. 38750/ 

 Publication cost\*
 :Rs. 7,75,000/ 

 Total
 :Rs. 7,75,000/ 

Overhead charges over and above

7.5% or maximum Rs.1,00,000 : Rs. 58125/-\*\*

- \* ICSSR would publish it subject to recommendation by the expert and relevant Committees for the purpose, from the overall budget, so to be retained by the ICSSR .
- \*\*will be released on successful completion of project after evaluation.

(The break-up budget approved by the ICSSR of Rs. 07,75,000/- is enclosed.)

4. The **First** installment of the approved grant-in-aid will be released after receiving the grant-in-aid bill duly filled in, stamped and signed by the Project Director as well as the affiliating organization. **(GIB already received).** 

- 5. In case, the study involves survey research, the finalized schedules/questionnaires (2 copies) designed to elicit information should be sent to the ICSSR as per the following schedule:
  - a) If the schedule /questionnaire for eliciting information is as per standard questionnaire, these will have to be sent to ICSSR immediately,
  - b) If the schedule /questionnaire for eliciting information are to be designed afresh keeping in view the requirements of the project, these will have to be sent to the ICSSR within a period of six months in any case.
- 6. The Second instalment will be released after receiving a satisfactory six/nine monthly/annual progress report, one published research paper in peer reviewed journal along with a simple statement of account of the account for the first instalment in prescribed format (Depending upon the duration of the Project).
- 7. The Third instalment will be released after receiving the Final Report (two hard copies and one soft copy in CD/or pen-drive) along with the executive summary (3000 to 4000 words/ten copies) and Research Papers (two) and the statement of account of the second instalment. Such data or information relating to the research project as may be asked for by the ICSSR for preservation in its Data Archives should be given by the scholar.
- 8. The scholar shall acknowledge support of ICSSR in all publications resulting from the project output (Research Paper, Books, Articles, Reports, etc.) and should submit a copy of the same to the ICSSR during its course and after completion.
- 9. The Fourth instalment will be released on the receipt of: (a) Satisfactory book length of the Final Report in the publishable form after incorporating all corrections, suggestions of the expert; (b) Statement of accounts with Utilization Certificate in GFR of 12A form for the entire project amount duly signed by the Finance Officer/Registrar/Principal/Director of the affiliating institution (c) A certificate of statement of assets and books purchased out of the project fund issued by the affiliating institution.
- 10. The University/Institution of affiliation will provide to the scholar office accommodation including furniture, library and research facilities and messengerial services. For this, the ICSSR shall pay to the University/Institution of affiliation overhead charges @7.5% over and above or maximum Rs.1,00,000 of the total expenditure incurred on the project only after successful completion of the project.
- 11. The Contingency Grant may be utilized for research and office assistance, books, stationary, computer cost, research assistance and the field work expenses of Project Director, Co-Project Directors and research personnel connected with the research work.
- 12. The overhead charges to the affiliating institution over and above @ 7.5% or maximum Rs.1,00,000 will be released only after successful completion of the project after evaluation. The accounts and the Utilization Certificate will be signed by the Finance Officer/Registrar/Principal/Director in the case of accounts of the institution are audited by CAG/AG. Otherwise, they need to be signed by the Finance Officer and the Chartered Account.
- 13. The Director of the research project will be **Dr.** R **C Patel**, who will be responsible for its completion within **24 Months** from the date of commencement of the project, which is **20-01-2020** as intimated by the scholar.
- 14. In case, the Project Director does not submit the periodic / final project report as per schedule with adequate justification, the scholar may be debarred from availing all future financial assistance from ICSSR.



- 15. All grants from ICSSR are subject to the general provision of GFR 2005 and in particular with reference to the provision contained in GFR 209, GFR 210, GFR 211 and GFR 212.
- 16. The Project Director will ensure that the expenditure incurred by him conforms to the approved budget heads. The grant-in-aid is subject to all the conditions laid down in the Indian Council of Social Science Research (ICSSR) Research Projects available in the ICSSR website www.icssr.org
- 17. The expenditure on this account is debatable to the Budget Head-ICSSR (Scheme Code 0877); OH 31.09 Research Projects.
- 18. All project instalments will be transferred through **Public Finance Management System (PFMS)** and ICSSR shall implement the EAT module for ensuring transparency of expenditure at all levels and to ensure that there is no parking of funds.
- 19. As per MHRD instruction, the amount of grant sanctioned herein is to be utilized by the end of the project duration. Any amount of the grant remaining unspent shall be refunded to the ICSSR immediately after the expiry of the duration of the project. If the grantee fails to utilize the grant for the purpose for which the same has been sanctioned/or fails to submit the audited statement of expenditure within the stipulated period, the grantee will be required to refund the amount of the grant with interest thereon @ 10% per annum.

Yours faithfully,

(Revathy Vishwanath)
For MEMBER-SECRETARY

Encl: as above. Copy to:

1. Dr. R C Patel,
Professor In Education,
The M S University of Baroda,
Adodara-Gujarat-390002.

Dr. Jyotsna Amin , Assistant Professor, Pratap Gunj, Vadodara, Gujarat, Pincode-390002

- 3. Dr Sudhir tandel,
  Assistant Professor,
  Pratap Gunj, Vadodara,
  Gujarat, Pincode-390002.
- 4. Finance Branch, ICSSR, New Delhi
- 5. Record file

(Revathy Vishwanath)
For MEMBER-SECRETARY

### Project Budget

Title: Major Research Project entitled "Construction and standardization of work place happiness scale for teachers."

By: Dr. R.C. Patel

S.No.	Heads of Expenditure	Value	(Rs.)
1	Project Director/Co-Project Director	Honorary	0
2	Research Staff : Full time/Part- time/Hired Services	Not exceeding 45% of the total budget.	348750
3	Fieldwork: Travel/Logistics/Boarding, etc. including Books/Journals	Not exceeding 35%	271250
4	Equipment and Other Items: computer, printer etc / Source Material/Software and Data Sets, etc.	Not exceeding 10%	77500
5	Contingency	Not exceeding 5%	38750
-	Publication of Report	5%*	38750
	TOTAL	100%	775000
	Institutional Overheads (over and above the total cost of the project)	Affiliating Institutional	58125

\* The five percent (5%) publication amount will be spent by the ICSSR Publication Division if the Final report is found publishable by an Expert Committee constituted by the ICSSR.

# • Remuneration and Emoluments of Project Staff

- (a)Project staff could be engaged by the Project Director on a full/ part-time basis during the research work and the duration/consolidated monthly emoluments of their employment may be decided by the project director within the limits of the sanctioned financial allocation and as per the ICSSR rules (b) Research Associate @Rs.25, 000/- p.m. (Qualification Post graduate in any social science discipline with minimum 55% marks and NET/SLET /M.Phil/Ph.D)(c)\Research Assistant @Rs.20, 000/- p.m. (Qualification-Ph.D./M.Phil./ Post graduate in social science discipline with minimum 55% marks(d) Field Investigator @ Rs.15, 000/- p.m. (not exceeding 6 months) (Qualification- Post graduate in any social science discipline with minimum 55% marks)(e) Retrospective payment for work already done is not permissible.
- Re-appropriation: The Project Investigator may with the permission of the Institution, re-appropriate expenditure from one sub-head to another, subject to a maximum of 10 % of the particular budget heads. If the study necessitates re-appropriation beyond10%, it may be done only after the approval of the ICSSR
- Selection of Research Staff should be done through an advertisement and a selection committee consisting of (1) Project Director; (2) One outside Expert (other than the institute where the project is located); (3) a nominee of the Vice Chancellor/Head of the Institution and (4) Head of the Department)/Dean of relevant faculty duly approved by the competent authority.
- For all field work related expenses of Project Director, Co-Director and project personnel, rules pertaining to affiliating institutes shall be followed.
- All equipment and books purchased out of the project fund shall be the property of the affiliating institutions. On completion of the study, the Project Director shall submit an undertaking in this regard. The ICSSR, however, reserves the right to take charge of equipment and books, if it thinks it fit in a case.
- Purchase of equipment/ assets for the research Project is permissible only if it is originally proposed and approved by the ICSSR and does not exceed the permissible amount.

Remilhar



### SCHOOL OF SCIENCES GUJARAT UNIVERSITY AHMEDABAD

Fax (0.79) 26308545 (C.U.)
Lelephone No. 26300969
Telegram UNISCIFNCI
DEPARTMENT OF CHEMISTRY
School of Sciences
Guprat University
Abmedahad 380009 (MDIA)

Date

Ret Sci Chemistry

Ref. No.: GU/Chem/174 /2018

August 1, 2018

Mr. Ajay Kumar Education Officer University Grants Commission, Bahadurshah Zafar Marg, New Delhi - 110002

Subject - UGC Start up Grant - regarding

Reference: Your letter No. F.30-369/2017(BSR) dtd. 20th August. 2017

Sir.

I am directed to write to you with further reference to the above subject and reference and would like to request you to accept the expenditure of Rs. 3.43.398/- as per the Utilisation Certificate enclosed. The expenditure incurred has been done as per the Original Proposal of submitted on this 01/12/2016 reference date. The process of Utilisation of Grant has been carried out as per the following link and the details available and after the approval of the statutory body and competent authority:

"It is also mentioned on cover page for basic information (Nature of Assistance) that the quantum of funds under each head can be decided by the PI depending on his/her need maintaining the maximum limit."

Moreover, I would like to draw you kind attention to the fact that the above reference was received by us on the 30<sup>th</sup> August-2017. The Grant was received by us on the 8<sup>th</sup> November, 2018. The Grant is On-going and will be fully utilized by 31<sup>st</sup> March, 2019. Therefore we request you to accept the Utilisation Certificate and we will send you the final UC once the grant is fully utilized after 31<sup>st</sup> March, 2019.

Thanking You.

Sincerely Yours. 3

Hemant Prajapati

Forwarded Through:

Head of Department, (Chemistry)

Registrar, Gujarat University

Registrar (1/c.)
Gujarat University
Ahmedabad-380 000.

Enclosures:

ograndya unt.



#### SCHOOL OF SCIENCES GUJARAT UNIVERSITY AHMEDABAD

Fax: (079) 26308545 (G.U.) Telephone No 26300969 Telegram: UNISCIENCE DEPARTMENT OF CHEMISTRY School of Sciences Gujarat University Ahmedabad-380009 (INDIA)

Date

Ret /Sci./Chemistry

Ref. No: GU/Chem/174 /2018

August 1, 2018

Mr. Ajay Kumar Education Officer University Grants Commission, Bahadurshah Zafar Marg, New Delhi - 110002

Subject - UGC Start up Grant - regarding

Reference: Your letter No. F.30-369/2017(BSR) dtd. 20<sup>th</sup> August, 2017

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Thanking You.

Sincerely Yours,

Hemant Prajapati

Forwarded Through:

Head of Department, (Chemistry) as my

Registrar, Gujarat University

Registrar (1/2) Gujarat University

**Enclosures:** 

James Wil



# पार्यनेव रहयते

# विश्वविद्यालय अनुदान आयोग

University Grants Commission मानव संसाधन विकास मंत्रालय, भारत सन्कार (Ministry of Human Resource Development, Govt. of India) बहाद्र शाह जफर मार्ग नई दिल्ली- 110 002

Bahadurshah Zafar Marg. New Delhi - 110002 Phone: 011-23604410, 011-23604425



No.F.30-369/2017(BSR)

By Speed Post

July 2018

The Registrar, Guiarat University, Ahmedabad - 380009

Subject:-

UGC-Start up Grant - Regarding.



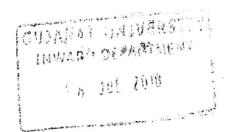
Sir.

With reference to letter no.nil dated 07,04,2018 on the subject cited above and received from Dr. HemantKumar R Prajapati, Assistant Professor, I am directed to inform you that as per guidelines of the scheme the grant can be utilized for purchasing minor equipment's maximum upto Rs.1.00,000/- (Rupeer one labb anly). Dr HennontKrow of R Prajapati has incurred an amount of Rs.1.91.580/- on minor equipment towards. Start-up Grant under the Scheme of BSR, which is not admissible.

You are therefore, requested to refund an amount of Rs 91580 - against the expenditure incurred on minor equipment and also refund the unspent balance d Rs.4.56.602/- alongwith the interest earned, if any, against the grant of Rs 8,60 takes sanctioned vide letter even number dated 30,08. The above said amounts are to be credited through RTGS/NEFT directly to the UGC account, immediately, as per the following Hans details.

	7	Canara Bank, University Grants
Name of Bank		Commission, New Delhi – 110 002
Account Number	<u>:</u>	8627101002122
	:	Saving
Type of Account	†	CNRB0008627
IFSC Code		
MICR Code		110015170
		University Grant Commission.
Holder of account		New Delhi-110002

The details of refund made are to be sent to Section Officer, BSR Section, Room No.400, Bahadur Shah Zafar Marg, New Delhi - 110003 Yours tenthinlis



(Ains Kumar) Education Officer



FD Diary No.2896 Dated: 06.07.2017

# University Grants Commission Bahadur Shah Zafar Marg New Delhi-110 002

No.F.30-369/2017(BSR)

Dated: August, 2017

The Under Secretary FD-III Section, University Grants Commission Bahadur Shah Zafar Marg. New Delhi - 110002.

Subject:-

Approval-cum-Sanction letter for UGC-BSR Research Start-Up-Grant for newly recruited faculty at Assistant Professors level in Science Departments of various Universities -Release of the grant for the year 2017-2018 under Revenue.

The University Grants Commission convey its approval and allocate a sum of Rs.10,00,000/- (Rupees Sir. Ten Lakhs Only) @ Rs.10.00 Lakh to each Faculty to the Registrar, Gujarat University, Ahmedabad-380009, Gujarat being the UGC-BSR Research Start-Up-Grant for newly recruited faculty at Assistant

Professors level of Science Departments. Accordingly, I am further directed to convey the sanction of the University Grants Commission for payment of Rs.8,00,000/- (Rupees Eight Lakhs only) (80% of the approved Grant Rs.10.00 Lakhs to each Faculty) to the Registrar Gujarat University, Ahmedabad-380009, Gujarat towards UGC-BSR Research Start-Up-Grant for newly recruited faculty at Assistant Professors level in Science Departments as per details given below, the expenditure to be incurred during 2017-2018.

Name of the Item	Head of Account	Name of Faculty / Professor	Name of Departments	Amount Approved	Amount being released Rs.
UGC-BSR Start-up grant for newly recruited faculty at	3(A) (68) 31	Dr. Prajapati Hemant Kumar Ramanlai	Chemistry	10,00,000/-	8,00.000/-
Assistant Professor level in science department			Total:	10,00,000/-	8,00,000/-

- The sanctioned amount is debitable to the major Head 3(A) (68) 31 and is valid for payment during the 15 financial year 2017-18 only
- The amount of the Grant shall be drawn by the Under Secretary (Drawing and Dispursing Officer) UGC on the Grants-in-aid bill and shall be disbursed to and credited to the Registrar, Gujarat University. 3 Ahmedabad-380009, Gujarat through Electronic mode as per the following details:

a.	Details (Name & Address) of a Account Holder	Registrar, Gujarat University, Post Box No.4010, Navrangpura, Ahmedabad- 380009
b. c	Account No. Name & Address of Bank Branch	10298776261 State Bank of India, Gujarat University Branch, Navrangpura, Ahmedabad-380009
d e f	MICR Code IFSC Code Type of Account	380002017 SBIN0002651 Saving

- The Grant is Subject to the adjustment on the basis of Utilization Certificate in the prescribed 4. proforma submitted by the University/Institution
- The University / Institution shall maintain proper accounts of the expenditure out of the Grants which shall be utilized only on the approved items of expenditure 5
- The University / Institution may follow the General Financial Rules 2005 and take urgent necessary action to amend their manuals of financial procedures to bring them in conformity with GFRs 2008 6 and those don't have their own approved manuals on financial procedures may adopt the provisions of GFRs, 2005 and instructions/guideline there under from time to time

- 7. The Utilization Certificate to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the UGC as early as possible after the close of the current financial year.
- The assets acquired wholly or substantially out of University Grants Commission's Grant Shall not be disposed or encumbered or utilized for the purposes other than those for which the grants was given, without proper sanction of the UGC and should at any time the University ceased to function, such assets shall revert to the University Grants Commission.
- A Register of Assets acquired wholly or substantially out of the grant shall be maintained by the University in the prescribed proforma.
- The grantee institution shall ensure the utilization of grants-in-aid for which it is being sanctioned / paid. In case of non-utilization/part utilization thereof, simple interest @ 10 % per annum as amended from time to time on the unutilized amount from the date of drawal to the date of refund as per provisions contained in General Financial Rules of Govt. of India, will be charged.
- The University / Institution shall follow strictly the Government of India / UGC's guidelines regarding implementation of the reservation policy [both vertical (for SC, ST & OBC) and horizontal (for persons with disability etc.)] in teaching and non-teaching posts.
- The University / Institution shall fully implement the Official Language Policy of Union Government and comply with the Official Language Act, 1963 and Official Languages (Use for Official Purposes of the Union) Rules, 1976 etc.
- The sanction is issued in exercise of the delegation of powers vide UGC Order No. 130/2013 [F.No. 10-11/12 (Admn. IA & B)] dated 28/5/2013.
- 14 The University /Institution shall strictly follow the UGC Regulations on curbing the menace of Ragging in Higher Education Institutions, 2009.
- 15. The University / Institution shall take immediate action for its accreditation by National Assessment & Accreditation Council (NAAC).
- 16. The accounts of the University / Institution will be open for audit by the Comptroller & Auditor General of India in accordance with the provisions of General Financial Rules, 2005.
- 17. The annual accounts i.e. balance sheet, income and expenditure statement and statement of receipts and payments are to be prepared strictly in accordance with the Uniform Format of Accounting prescribed by Government.
- This issues with the concurrence of IFD vide Diary No.786 (IFD) Dated:25.05.2017.
- 19 This issues with the approval of C.M. Sectt. vide Diary No.39690 Dated:08.06.2017

Noted in BCR Register 2017-2018 at P.No.03 S.No. 12.

Yours faithfully,

(Mrs. Paramjeet) Under Secretary

Copy forwarded for information and necessary action to:-

- Registrar, Gujrat University, Ahmedabad-380009, Gujarat. He/She is requested to abide by these
  instructions/guidelines of sanction order.
- 2. The Secretary (Education) to the State Government of Gujrat, Ahemdabad.
- 3. The Head, Department of Chemistry, Gujrat University, Ahmedabad-380009, Gujarat.
- 4. Dr. Prajapati Hemant Kumar Ramanlal, Department of Chemistry, Gujarat University Ahmedabad-380009, Gujrat
- 5. The Director General of Audit, Central Revenues, AGCR Building, I.P. Estate, New Delhi.

Guard file

(H.C. Pandey) Section Officer

# (A) <u>Title of the project</u>

"Study of liquid crystal materials and their thermometric properties"
(B) Introduction

### Origin of the Problem:

Liquid crystals are well known today to a broad scientific community. Liquid crystals represent an intermediate state of matter between optical properties of crystalline solids and mechanical properties of liquid. In 1888, an Austrian botanist, Friedrich Reinitzer (1), for the first time observed that cholesteryl benzoate, in contrast to normal behaviour of the organic compounds in general, exhibited two "melting points" one at 145 °C when the fluid has a coloured cloudy appearance and the other at 175 °C when the melt exhibiting vivid colours vanishes like other compounds. This phenomenon is reversible. However Otto-Lehmann (2) was the first to make a systematic study of such substances and proposed the name 'Liquid Crystals' for such compounds. Soon after, Gattermann and Ritschke (3) and Vorlander (4) investigated several liquid crystalline compounds. A more satisfactory nomenclature was proposed by Friedel (5, 6) as the mesomorphic phase.

Today, many types of liquid crystals are known, and many more are likely to be discovered in the future. The soft nature of the medium, coupled with anisotropic optical and dielectric properties gives rise to many electro-optic effects at relatively low voltages. These are exploited in liquid crystal displays (LCDs), which are the lowest power (~1μw/cm²) consuming flat panel devices and used in all calculators, laptop and palmtop computers, cell phones etc. Further, phase transitions between different types of liquid crystals, some of which are analogous to those in other materials like magnets or superconductors, offer a rich variety of problems of fundamental significance.

## A brief review of development in the field:

A new technology to make driving at night a more comfortable experience has been proposed by Start-up Company. Inoptec, and Cambridge shire-based PA Consulting (7-8).

The concept is based around glasses featuring LC technology which can react to block glare from oncoming traffic. Researchers at the University of Melbourne have developed a new nematic liquid crystal (LC) material capable of providing improved solar cell performance (9, 10). Liquid crystal elastomers (LCEs) are made from liquid crystalline polymers, formed into a lightly cross-linked network. A new type of LCE has been developed at the United States Air Force Research Laboratory (11). The material is capable of changing from a flat sheet into a 3D structure upon application of heat.

Work Done: have synthesized and studied 88 new liquid crystal molecules and also synthesized and studied binary mixtures. (See the List of Publications)

<u>Plan for Work:</u> The present literature and the advancing frontiers are responsible for synthesis of newer liquid crystalline materials and study of the varying characteristics in accordance with the changing molecular geometry.

Future Application (Significance of the Study): It can be used as LC controlled drug delivery(12). It can be used as LC-based smart window technology (13). Merck, one of the leading companies in the LC market, announced in August that they would be investing €15 million into LC-based smart window technology. Merck hope to begin manufacturing the switchable glass by the end of 2017. A new type of liquid crystal display (LCD), capable of maintaining a 3D image, without power, has been developed. The device detailed in a recent Optics Letters paper (14), an optically rewritable LCD (ORWLCD), contains no electrodes to switch the image, unlike a conventional LCD. The key innovation in this research is that a 3D image can be generated on the display in a single step. So it is required to synthesize new liquid crystal materials of such potential which can help the thrust and evolving areas of applications.

# References:

- 1. Reinitzer, F., Monatsch, 9, 421 (1888).
- 2. Lehmann, Otto., Z. Phys. Chem. (Leipzig), 4, 462 (1889).
- 3. Gattermann, L. and Ritschke, A., Ber., 23, 1738 (1890).

- 4. Vorlander, D., Kristallinisch flussige Substanzen Vol. 12, 9-10 Heft, F., Enke, Stuttgart (1908).
- 5. Friedel, G., Ann. Phys. (Paris), 18, 273 (1922).
- 6. Friedel, G. and Friedel, E., Z. Krist., 79, 1 (1931).
- 7. Gooding M. Cambridge News [Internet]. 2016 Sep 30 (cited 2016 Oct).

Available at: <a href="http://www.cambridge-news.co.uk/how-electronic-glasses-could-make-driving-easier/story-29765818-detail/story.html">http://www.cambridge-news.co.uk/how-electronic-glasses-could-make-driving-easier/story-29765818-detail/story.html</a>,

8. PA Consulting. Press Release [Internet]. 2016 Sep 28 (cited 2016 Oct).

Available at: <a href="http://www.paconsulting.com/newsroom/releases/pa-consulting-group-helps-inoptec-launch-vision-enhancing-glasses-concept-28-september-2016/">http://www.paconsulting.com/newsroom/releases/pa-consulting-group-helps-inoptec-launch-vision-enhancing-glasses-concept-28-september-2016/</a>.

- 9. The Melbourne Newsroom [Internet]. Jan 2015. [cited 2015 Mar]. Available from: https://newsroom.mel bourne.edu/news/improved-solar-panels-and-printedelectronics-horizon-new-discovery.
- 10. Sun K, Xiao Z, Lu S, Zajaczkowski W, Pisula W, Hanssen E, White JM, Williamson RM, Subbiah J, Ouyang J, Holmes AB, Wong WWH, Jones DJ. A molecular nematic liquid crystalline material for highperformance organic photovoltaics. Nat Commun. 2015;6(6013). doi:10.1038/ncomms7013.
- 11. Ware TH, McConney ME, Wie JJ, Tondiglia VP, White TJ. Voxelated liquid crystal elastomers. Science. 2015;347(6225):982–984. doi:10.1126/science.1261019.
- 12. Glass on Web [Internet]. 2016 Aug 5 (cited 2016 Oct).

Available at:https://www.glassonweb.com/news/merckinvests-eu-15-million-liquid-crystal-window-technology.

- 13. Sun J, Srivastava AK, Zhang W, Wang L, Chigrinov VG, Kwok HS. Optically rewritable 3D liquid crystal displays. Opt Lett. 2014;39:6209–6212. doi:10.1364/ OL.39.006209.
- 14. David Wei, LC today: industry & applications, News, October 2016, Liquid Crystals Today, 2016 VOL. 25, NO. 4, 91–92,http://dx.doi.org/10.1080/1358314X.2016.1245695

# (C) Objectives:

The prime objectives of the proposed research work would be:

- The present study will be focused on synthesis of new liquid crystalline materials, to aid in the manufacture of various articles at economical cost, in a variety of applications.
- Synthesize and study of novel liquid crystalline materials having low crystalmesophase transition temperatures.
- 3. Liquid crystals with low crystal-mesophase transition temperatures and with wide phase length have been primary goal of organic chemists in recent years.
  - Since the occurrence of single component, room temperature liquid crystal with wide mesophase range is rare.
  - The objective also includes study of mixed mesomorphism in various binary systems, for lowering down mesomorphic range of temperature from application point of view.

## (D) Methodology

- 1. Literature survey and study of available liquid crystal materials.
- 2. Design and synthesis of liquid crystalline materials.
- Characterization of liquid crystal materials by IR, NMR, CHN(S), GC-MS, DSC.
- Determination of transition temperatures of liquid crystal materials by using Hot stage Polarizing Microscope.

# (E). Year-wise plan of work and targets to be achieved First year:

- 1. Extensive literature survey, procurement of minor equipments and raw materials (Chemicals and Glassware): 1-2 month
- 2. Synthesis, purification and characterization of compounds: 8 month
- 3. Determination of Transition Temperatures of newly synthesized liquid crystal Compounds: 1 month
- 4. Submission of progress report: 1 month

# Second year:

- 1. Based on study of results, more new liquid crystal compounds will be synthesized and the study of the same: 6-7 month
- 2. Writing of research papers, Presentations (in Conferences, Seminars, workshop) and Publications of research papers: 3 month
- 3. Writing of Final report and submission: 1-2 month

# (F). Details of Collaboration Not Applicable

(G). Planned break-up of the utilization of the grant

Sr.	Item	Estimated Expenditure (INR)		
No.		First Year	Second Year	
1.	Minor Equipment(detailed given in following table)	5,25,000		
2.	Books and Journals	20,000	15,000	
3.	Consumables (Chemicals and Glassware)	1,50,000	70,000	
4.	Contingency	30,000	20,000	
5.	Field work and Travel (Research Papers Presentation and Publications)	25,000	25,000	
6	Hiring services (Analysis)	25,000	25,000	
7.	Special needs	35,000	15,000	
8	Total (yearly)	8,10,000	1,70,000	
	Grand total	9,80,000.00		

# Minor Equipment detail:

Sr.	Equipment detail	Unit	Unit	Total Prize in INR
No.		prize		
1	Polarizing microscope**	3,00,000	01	3,00,000
2.	Multi magnetic stirrer with hot plate (6 Stage)	42,000	01	42,000
3.	Analytical balance	75,000	01	75,000
4.	Heating mental with stirrer	7,500	04	30,000
5.	Vacuum pump	18,000	01	18,000
6.	Vacuum Oven for material drying	35,000	01	35,000
7.	Refrigerator for storage of chemicals	25,000	01	25,000
		Grand t	otal	5,25,000

<sup>\*\*</sup> In our Department, We have Polarizing Microscope (Leica Microsystems Wetzlar GmbH Company, TYPE020-520.704, DMLM/P BZ:00 551066 213758) but its part of Camera and Heating Stage are not in proper working condition. So modification is required.

# UNIVERSITY GRANTS COMMISSION UTILIZATION CERTIFICATE

The University Grants Commission has provide total grant of Rs.- <u>8,00,000.00</u> (Eight Lakhs) for UGC- BSR Research Start-Up Grant to Assistant Professor- Dr Hemantkumar R. Prajapati vide letter No.F.30-369/2017 (BSR) dated 30 Aug 2017.

It is certified that the Out of Total Grant Approved by the University Grants Commission for Ugc- Bsr Research Start-Up Grant (Head -3(A) (68) 31) an amount of Rs.3,43,398.00 (Three lakhs Forty Three Thousand Three Hundred Ninety Eight Rupees) has been utilized for the purpose for which it was sanctioned.

All the terms and Conditions have been fulfilled by the institution and the grant has been utilized for the purpose for which it was approved after sanctions from the Competent Authority and Statutory Bodies.

It is further certified that inventories of permanent or semi-permanent assets created/acquired wholly or mainly out of the grants given by the University Grants Commission as indicated above are being not been disposed of, encumbered or utilized for any other purpose.

M No. 162263 RN 139838W Abmedabad

Signature (with seal)

Signature(with seal)

Registrar

Registrar, Gujarat University Ahmedabad-9.

Government Auditor

Chartered Accountant/

Date: 31/08/2018

Place: Almedubud



Fax (079) 2530H545 (CT) Telephone No 25300969 Telegram UNISCIENCE DEPARTMENT OF CHEMISTRY School of Sciences Gujarat University Ahmedabad-380009 (INDIA)

Oate

Ret /Sci /Chemistry

Ref. No.: GU/Chem/174/2018

August 1, 2018

Mr. Ajay Kumar Education Officer University Grants Commission. Bahadurshah Zafar Marg. New Delhi -- 110002

Subject - UGC Start up Grant - regarding

Reference: Your letter No. F.30-369/2017(BSR) dtd. 20th August. 2017

Sir.

I am directed to write to you with further reference to the above subject and reference and would like to request you to accept the expenditure of Rs. 3.43,398/- as per the Utilisation Certificate enclosed. The expenditure incurred has been done as per the Original Proposal of submitted on this 01/12/2016 reference date. The process of Utilisation of Grant has been carried out as per the following link and the details available and after the approval of the statutory body and competent authority:

"It is also mentioned on cover page for basic information (Nature of Assistance) that the quantum of funds under each head can be decided by the PI depending on his/her need maintaining the maximum limit."

Moreover, I would like to draw you kind attention to the fact that the above reference was received by us on the 30<sup>th</sup> August-2017. The Grant was received by us on the 8<sup>th</sup> November, 2018. The Grant is On-going and will be fully utilized by 31<sup>st</sup> March, 2019. Therefore we request you to accept the Utilisation Certificate and we will send you the final UC once the grant is fully utilized after 31<sup>st</sup> March, 2019.

Thanking You.

Sincerely Yours,

Hemant Prajapati

Forwarded Through:

PROFESSOR & HEAD CHEMISTRY DEPARTMENT Head of Department. (Chemistry AHMEDABAD-3800C)

Enclosures: 1) UGC Letter Photocopy

(2) Approval-cum - Semenium Letter Photocopy Registrar (I/c.)
Gujarat University
Ahmedabad-380 009.

(3) Photocopy of submitted Research proposal (01/12/2016) to Usec.

Registrar, Gujarat U

Page 17 of 26

# UNIVERSITY GRANTS COMMISSION UTILIZATION CERTIFICATE

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M. No. 162263 FRN : 139838W

Signature (with seal)

Signature(with seal)

71,0

Chartered Accountant/

Registrar

Registrar, Gnjarat University Ahmedabad-9.

**Government Auditor** 

Date: 31/08/2016

Place:

Almedabad

### NB:

- 1. The Utilization Certificate should be accompanied by audited statement of accounts indicating expenditure on various items. (Annexure A)
- 2. The asset certificate is to be given only for grants approved for books, equipment. buildings and other non-recurring items. (Annexure B)

# Annexure A

_	Ugc- Bsr Research Start Up Project Grant)							
	Project Co Ordinator- Dr .Hemantkumar R. Prajapati							
	Department of Chemistry							
		01-04-2017 to 3	1-03-2018	3				
	Grant Utilisation Certificate (Expenditure Details)							
		Budget		Actu	al			
Sr No	Budget Code	Budget Head	Allocated Budget Amount	Actual Amount Received	Actual Amount Utilised			
Α		MINOR EQUIPMENTS		4,50,000	1,91,580			
В	403333	CONSUMABLES	8 00 000	200000	97,539			
С	405333	CONTINGENCY	8,00,000	100000	40,000			
D	,	TRAVEL		50000	14,279			
		Total .	8,00,000	8,00,000	3,43,398			

# Armexure-B

	Ugc- Bsr Research Start Up	o Project Grant)			
Proj	ject Co Coordinator- Dr .Hema	antkumar R. Prajapati			
	Department of Che	ernistry			
	<b>01-04-2017</b> to 31-03	3-2018			
	Grant Utilisation Certificate	(Assets Details)			
Sr No	Assets Name	Assets Value			
Α	LEPTOP LENOVO	40,800/-			
В	B Magnetic Stirrer with Heating Stage 1,13,280/-				
С	Refrigerator	37,500/-			
	Total	1,91,580/-			

As per the details provided by project coordinator all the consumables purchased are of non-recurring items so we have not considered its closing stock value while issuing this utilization certificate.

M. No. 162263 F FRN: 139838W Ahmedabad by

Page 19 of 26

## NB:

- 1. The Utilization Certificate should be accompanied by audited statement of accounts indicating expenditure on various items. [Annexure A]
- 2. The asset certificate is to be given only for grants approved for books, equipment. buildings and other non-recurring items. (Annexure B)

# Annexure A

	Ugc- Bs	r Research Sta	rt Up Pro	ject Grant	t)
	Project Co	Ordinator- Dr .He	emantkur	nar R. Praja	pati
		Department o	f Chemist	ry	
		01-04-2017 to	31-03-201	3	
	Grant U	tilisation Certificat	e (Expendi	ture Details)	
		Budget		Actu	 al
Sr No	Budget Code	Budget Head	Allocated Budget Amount	Actual Amount Received	Actual Amount Utilised
Α		MINOR EQUIPMENTS		4,50,000	1,91,580
В	403333	CONSUMABLES	0.00.000	200000	97,539
С	403333	CONTINGENCY	8,00,000	100000	40,000
D		TRAVEL		50000	14,279
	T	otal	8,00,000	8,00,000	3,43,398

# Armexure-B

	Ugc- Bsr Research Start U	p Project Grant)
Pro	ject Co Coordinator- Dr .Hema	antkumar R. Prajapati
	Department of Che	ernistry
	<b>01-04-2017</b> to 31-03	3-2018
	<b>Grant Utilisation Certificate</b>	(Assets Details)
Sr No	Assets Name	Assets Value
A	LEPTOP LENOVO	40,800/-
В	Magnetic Stirrer with Heating Stage	1,13,280/-
С	Refrigerator	37,500/-
	Total	1,91,580/-

As per the details provided by project coordinator all the consumables purchased are of non-recurring items so we not considered its closing stock value while issuing this utilization certificate.

M. No. 182263 % FRN . 139838W Ahmedabad

Page 20 of 26

# UNIVERSITY GRANTS COMMISSION UTILIZATION CERTIFICATE

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All the terms and Conditions have been fulfilled by the institution and the grant has been utilized for the purpose for which it was approved after sanctions from the Competent Authority and Statutory Bodies.

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Signature (with seal)

Chartered Accountant/

**Government Auditor** 

Signature(with seal)

Registrar

Registrar, Gujarat University Ahmedabad-9.

Date: 31/08/2018

Place: Almedabad.



# **NSAB & Associates**

Chartered Accountants

UNIVERSITY GRANT COMMISSION

# **UTILIZATION CERTIFICATE**

The University Grants Commission has provide total grant of Rs. 8,00,000/- (Eight Lakhs) for UGC – BSR Research Start-Up-Grant to Assistant Professor – (Dr. Hemantkumar Ramanlal Prajapati) vide letter No. F.30-369/2017 (BSR) dated 30 August,2017.

It is certified that the Out of Total Grant Approved by the University Grants Commission for UGC-BSR Research Start-Up Grant an amount of Rs. 10,00,000/- ( Ten Lakhs ) has been utilized up to 29/08/2019 for the purpose for which it was sanctioned.

All the terms and conditions have been fulfilled by the institution and the grant has been utilized for the purpose for which it was approved after sanctions from the Competent Authority and Statutory Bodies.

It is further certified that inventories of permanent or semi-permanent assets created/acquired wholly or mainly out of the grant given by the University Grants Commission as indicated above are being not been disposed of, encumbered or utilized for any other purpose.

Place :- Ahmedabad Date :- 21/10/2019

UDIN No.:- 19155836AAAACYT6777

For, NSAB & Associates Chartered Accountants

CA Arpit Brahmbhatt (Partner)

M No.: 155836 FRN : 134295W

Office: 69, Bhagwati Estate, Opp. Dimple Stationery Mart, Amraiwadi, Ahmedabad - 380 026.

Office: B/2, Anand Colony, Near Pooja Vidyalaya C.T.M. Cross Road, Ahmedabad. Mobile: 88664 78760, E-mail: arpit.brahmbhatt1987@gmail.com



# **NSAB & Associates**

Chartered Accountants

#### UNIVERSITY GRANT COMMISSION

# **UTILIZATION CERTIFICATE**

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Place :- Ahmedabad

Date :- 15/04/2019

UDIN No.:- 19155836AAAAAD3944

For, NSAB & Associates Chartered Accountants

CA Arpit Brahmbhatt (Partner)

M No.: 155836 FRN: 134295W

## Annexure-A UGC-BSR Research Start Up Project Grant Grant Utilisation Certificate (Expdenditure Details)

Sr.No.	Budget Head	Approved Budget Amount	Received Amount	Actual Amount Utilised for the FY 2017-18	Actual Amount Utilised for the FY 2018-19	Till 29.08.2019	Difference
1	Minor Equipment	10,00,000		1,91,580			
2	Consumables (Chemicals, Glasswares, Books, Journal, Data Analysis, Field work)		8,00,000	97,539	4,10,881	1,85,721	2,00,000
3	Contingency	]		40,000	45,721	14,279	
4	Travel			14,279	-	-	
	Total	10,00,000	8,00,000	3,43,398	4,56,602	2,00,000	-2,00,000





# ગુજરાત કાઉન્સિલ ઓફ એલીમેન્ટરી એજ્યુકેશન સ્ટેટ પ્રોજેકટ ડાયરેકટરની કચેરી સર્વ શિક્ષા અભિયાન, સેક્ટર–૧૭.

ગાંધીનગર,(ગુજરાતરાજ્ય)

कोन नं. ०७७-२७२ ४७१७७, हेड्स नं.- ०७७-२७२ उर४७६

હેલ્પલાઈન નં. ૧૮૦૦–૨૩૩–૭૯૬**૫** E-mait : <u>doengujarat@yakoo.com, spossam@amail.com</u>

કમાંક: એસએસએ/આર.એન્ડ ઈ./૨૦૧૫ / ૪૬૦૫૯-૬૦

at, 04/11/2014

પ્રતિ.

ર્ડા. સુંઘીર. એચ. **ટંડેલ,** આસિસ્ટન્ટ **પ્રોકેસર (શિ**ક્ષણ વિભાગ) હેમચેન્દ્રાચાર્ય**, ઉત્તર ગુજરાત યુનિવર્સિટી,** પાટણ

**વિષય : રાજ્ય ક**ક્ષાના સંશોધન અંગેનો વર્કઓર્ડર આપવા બાબત.

સંદર્ભ : (૧) ર્ડા.સુધીર એચ. ટંડેલ, હેમચંન્દ્રાચાર્ય, ઉત્તર ગુજરાત યુનિવર્સિટી, પાટણ પાસેથી મળેલ દરખાસ્ત તા. ૧૦/૦૯/૨૦૧૫.

ર) સ્ક્રિટીની કમિટિની બેઠક નોંધ તા. ૦૪/૧૧/૨૦૧૫.

(૩) માન.એસપીડીશ્રીની આ શાખાની તા.૦૪/૧૧/૨૦૧૫ની નોંધ પર મળેલ મંજૂરી.

શ્રીમાન,

ઉપર્યુકત વિષય અને સંદર્ભ પત્ર અન્વયે આપશ્રીને જણાવવાનું કે તા. ૦૪/૧૧/૨૦૧૫ના રોજ રાજય કક્ષાની સંશોધન સમિતિની બેઠક મળેલ હતી. આ અનુસંધાને સંદર્ભ : (૧) થી ડાં.સુધીર એચ. ટંડેલ, હેમચંન્દ્રાચાર્ય, ઉત્તર ગુજરાત યુનિવર્સિટી, પાટણ એ તા. ૧૦/૦૯/૨૦૧૫ ના રોજ સંશોધન અંગેની દરખાસ્ત અત્રેની કચેરીને મોકલી આપેલ હતી. સંદર્ભ : (૨) થી રાજય કક્ષાના સંશોધન અંગેની રાજય કક્ષાની સંશોધન સમિતિએ આ સંશોધન અંગે ભલામણ કરી હતી. સંદર્ભ : (૩) થી માન. એસ.પી.ડી.શ્રી.એ આ શાખાની નોંધ પર આ સંશોધન અંગે મંજૂરી આપેલ હતી.

સબબ, ઉપર્યુકત હકીકતોને ધ્યાને લેતા ડાં.સુઘીર એચ. ટંડેલ, હેમચંન્દ્રાચાર્ય, ઉત્તર ગુજરાત યુનિવર્સિટી, પાટણને નીચે મુજબના રાજય કક્ષાના સંશોધન અંગેનો વર્કઓર્ડર આપવામાં આવે છે.

સંશોધન વિષય	સંશોધકનુ નામ / સંસ્થા	સંશોધનની રકમ
"A Study to assess the level and quality of inclusion of CWSN in regular school"	ર્ડા.સુધીર એચ. ટંડેલ, હેમચંન્દ્રાચાર્ય, ઉત્તર ગુજરાત યુનિવર્સિટી, પાટણ	Rs.5,92,840/-

92 ત<u>ે</u> : \_

(૧) 🛒 સંશોધન કાર્ય આપેલી ૦૩ (ત્રણ) માસની સમય મર્યાદા અને સમય શેડયુલ પ્રમાણે પુરુ કરવાનું રહેશે.

(ર) સંશોધન **અંગેની** સમીક્ષા બેઠકમાં એસ.એસ.એ,એસ.પી.ઓ. કચેરીએ મુખ્ય સંશોધકશ્રીએ ઉપસ્થિત રહેવાનું રહેશે.

(૩) અપશ્રીએ ટૂલ્સ, સેમ્પલ, ડીટેઈલ શેડયુઅલ ઓફ ડેટા ક્લેક્શન બનાવી અત્રેની સમીક્ષા બેઠકમાં રજૂ કરવાના રહેશે.
 (૪) તેજ રીતે પ્રથમ ડ્રાક્ટ રિપોર્ટ તથા તે પછી આખરી રિપોર્ટ પાંચ નકલમાં હાર્ડકોપી તથા સોફ્ટ કોપીમાં સમય મર્યાદા પ્રમાણે તૈયાર કરી સમીક્ષા બેઠકમાં રજૂ કરવાનો રહેશે.

(૫) આ ક**ચેરીના આઈઈ**ડી શાખાની સંશોધન પાટે સહકાર લેવાનો રહેશે.

(၄) આ કામ**ગીરી આદેશની** સ્વીકૃતિ પત્ર મળ્યે સંશોધનની કુલ રકમમાંથી ૪૦ % રકમ, પ્રથમ ડ્રાક્ટ રિપોર્ટ મંજૂર થયે ૪૦ % રકમ અને આ**ખરી** રિપોર્ટ (ફાયનલ રિપોર્ટ) મંજૂર થયે ૨૦ % રકમ ચુકવવામાં આવશે.

> ઓઆઈસી – આર એન્ડ ઈ સ્ટેટ પ્રોજેક્ટ કચેરી, **પાં**ધીનંગર

નકલ રવાના **જાણ અર્થે** :– — આઈઈ**ડી શાખા,** આ કચેરી glondel



# S. D. Mehta & Co.

Chartered Accountants

16-A, Ghanshyam Avenue, Sattar Taluka Society, Opp. C.U. Shah College, Nr. Incometax Under Bridge, Ahmedabad-380 014.

# **Utilization Certificate**

Certified that the grant of Rs. 5,92,840/- (Rupees Five lacs ninety two thousand eight hundred forty only) received from the Gujarat Counsil of Elementary Education, State Project Director Office. Sarva Siksha Abhiyan (SSA), Gandhinagar, under the state level project entitled, "a study to assess the level and quality of CWSN in regular school" vide letter No. SSA/R.&E./2015/46059-60 dated 05/11/2015 has been fully utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions laid down by the Gujarat Counsil of Elementary Education, Gandhinagar.

Place Patan

Date 07/02/2017

For, S. D. Mehta & Co.

Chartered Accountants

Partner

For, Hemchandracharya North

Gujarat University

PI

I/C Registrar