



YENEPOYA

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

Details of the Collaborative Activity

2020-21

Name of the Collaborating Institute: Central Marine Fisheries Research, Kochi

Name of the Collaborating Department: Yenepoya Research Center

Activities:

Joint Research Project –Extramural (ICMR)

A joint research Project “Molecular changes/damages, in the ocular surface associated stem cell populations in response to acute exposure to Ultra violet radiation (UVR) dose ranges and amelioration using novel epigallocatechin gallate (EGCG) analogs from marine sources: an in vitro study” was formulated by Dr. Bipasha Bose and Dr. Sudhir Shenoy from YRC and Dr. Kajol Chakraborty from CMFRI, Kochi. The same was technically approved by ICMR.

ATTESTED

Dr.Gangadhara Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Derlakatte
Mangalore- 575 013, Karnataka



Bipasha Bose <bipasha.bose@gmail.com>

Your submission titled 'Molecular changes/damages, in the ocular surface associated stem cell populations, in response to, acute exposures to ultraviolet radiation (UVR) dose ranges and amelioration using novel Epigallocatechin gallate (EGCG) analogs from marine sources: an in vitro study', Technically Approved

2 messages

icmr@cdac.in <icmr@cdac.in>
To: Bipasha.bose@gmail.com

Mon, Apr 6, 2020 at 11:54 AM

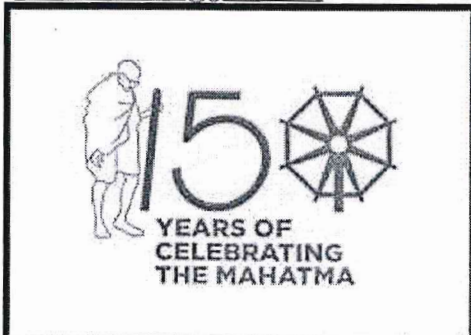
Dear DR. BIPASHA BOSE,

This has reference to your submission id 2020-0386 with title **Molecular changes/damages, in the ocular surface associated stem cell populations, in response to, acute exposures to ultraviolet radiation (UVR) dose ranges and amelioration using novel Epigallocatechin gallate (EGCG) analogs from marine sources: an in vitro study.** Your proposal has been technically approved.

Please upload required documents for Codal Formalities, for which the list is available on Online ICMR Extramural Portal.

With best regards ,
ICMR Team

This is a system generated mail. Please do not reply to it. For Any Further Correspondence please contact only at "onlineicmrteam@gmail.com / 011-26588590".



ATTESTED

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Dr. Gangadhara Somayaji K S
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018, Karnataka.

Bipasha <bipasha.bose@gmail.com>
To: Bipasha Bose <Bipasha.bose@yenepoya.edu.in>

Mon, Apr 6, 2020 at 7:58 PM

Bipasha Bose, PhD


Associate Professor
In-Charge,
Stem Cells and Regenerative Medicine Centre

Investigator Duties

The proposed project will be carried out as a collaborative study amongst the PI's team and Co-PI's team (Dr Sudheer Shenoy P) *from the same institute*. Dr Shenoy and his team have excellent technical expertise with primary cells. However, the PI Dr Bose and her team have excellent expertise with flow cytometric cell sorting and molecular techniques. Moreover, the PI Dr Bose has already published in the field of ocular stem cell biology.

Regarding *intra-institutional collaboration*, the Co-PI Dr Kajal Chakraborty and his team has isolated EGCG analogs from marine sources and established their work on various cancer cell lines (Unpublished results) The Co-PI's team has indeed published excellent results on anti-inflammatory and anti-hypertensive role of various other marine polyphenols in cancer cells. Valuable inputs regarding the dose and kinetics of both the EGCG analogs provided by Dr Chakraborty will be extended by his team.

ATTESTED


Dr. Gangadhar Somayaji KS
Professor
Yenepoya (Deemed to be University)
University Road, Yenepoya
Mangalore 575 001, Karnataka.

Name of PI : DR. BIPASHA BOSE

ICMR : ADHOC APPLICATION

Date of Submission : 2020-01-07 19:41:09.0

Proposal ID : 2020-0386

Indian Council of Medical Research
APPLICATION FOR AD-HOC PROPOSAL

Name (IN BLOCK LETTERS):	DR. BIPASHA BOSE
Gender:	F
Date of Birth of PI:	02-Apr-1972

DSIR Certificate Validity Date:	31/03/2021	Nature of Employment	Permanent
superannuation:	30/04/2037	Type of Institute:	Private
Have you received any funding for research project for ICMR as Principal Investigator:			NO
Have you received any funding for research project as Principal Investigator from any other Govt agency/Private Organization either national or international:			YES

ATTESTED

Dr. Gangadhara Somayaji K S
Registrar
Yenepoya (Deemed to be University)
University Road, Yenepoya
Mangalore 575 010, Karnataka.

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

Page 1 of 11

Name of PI : DR. BIPASHA BOSE

ICMR : ADHOC APPLICATION

Date of Submission : 2020-01-07 19:41:09.0

Proposal ID : 2020-0366

Awards and/or Honours Details

S.No	Awards and honours	Year
1	European Molecular Biology (EMBO) Travel Grant for EMBO workshop titled,EMBO workshop titled, Molecular mechanisms of Developmental and Regenerative Biology, Singapore	2018
2	Training award from BIRAC, DBT, Govt of India, to undergo training in the Centre for Excellence in Biopharmaceutical Technology in IIT, Delhi	2019
3	Travel Grant from Department of Science and Technology, for participation in the training programme on proteomics for women scientists in India conducted at Banaras Hindu University, Varanasi, India	2017
4	International Travel Grant from DST, Govt of India for invited oral presentation in the 5th International Conference of Tissue Engineering and Regenerative Medicine, Berlin, Germany	2016
5	Travel Grant from DBT to participate in the Young Investigators Meet	2016

Details of CO-PI

Name	Designation	Department	Institute/Organizations address	Email	Mobile No
Dr. Bipasha Bose	Senior Scientific Officer/Asst. Prof	N.A	Yenepoya University	Bipasha.bose@gmail.com	9730889609
Dr. Kajal Chakraborty	SENIOR SCIENTIST	N.A	CENTRAL MARINE FISHERIES RESEARCH	chakrabortycmfri@gmail.com	9446418432

Details of Co-Investigators

S.No	Name	Designation	Department/Institute/Organization's	Email	Mobile No.	Academic Qualifications	Total number of publications
1	Sudheer Shenoy P	Associate Professor	Yenepoya University, Dakshina Kannada, Karnataka	shenoy2000@yahoo.com	9108585282	PhD	22

ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya Deemed to be University
University Road, Deralakatte
Mangalore- 575 018, Karnataka

Proposed Budget (in Rs.)

Year	PI Name	Manpower	Equipment	Recurring	Travel	Overhead Charges	Total
Year : 1	Dr. Bipasha Bose	432000.00	210000.00	600000.00	50000.00	45000.00	1337000.00
	Dr. Kajal Chakraborty	0	0	200000.00	20000.00	0	220000.00
Year : 2	Dr. Bipasha Bose	432000.00	0	500000.00	50000.00	18000.00	1000000.00
	Dr. Kajal Chakraborty	0	0	100000.00	20000.00	0	120000.00
Year : 3	Dr. Bipasha Bose	432000.00	0	500000.00	50000.00	18000.00	1000000.00
	Dr. Kajal Chakraborty	0	0	100000.00	20000.00	0	120000.00

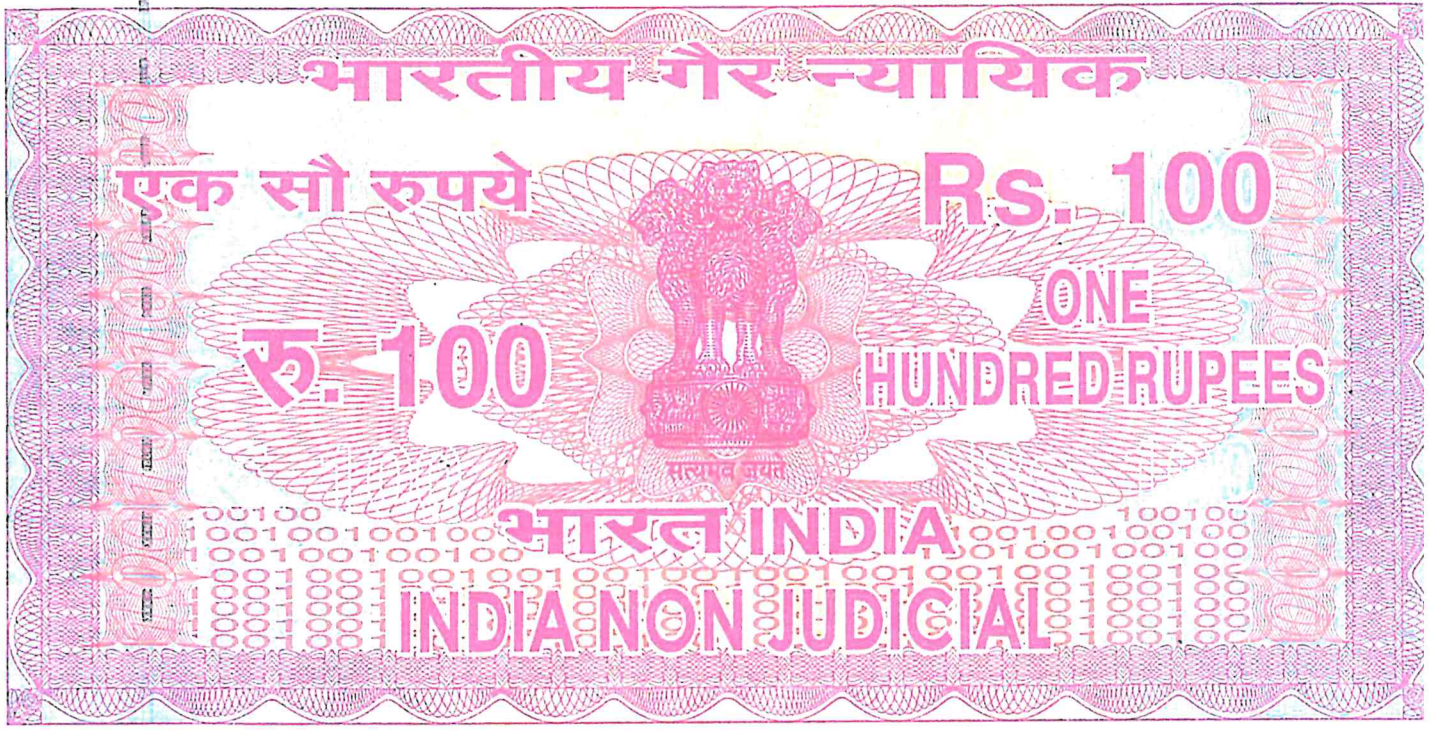
Total Budget (in Rs) :

37,97,000.00



ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Dersiakatte
Mangalore- 575 018, Karnataka



കേരളം KERALA

CE 661290

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is entered into this 7th day May 2019 by and between

THE ICAR-CENTRAL MARINE FISHERIES RESEARCH INSTITUTE, a national institution under the Government of India, Indian Council of Agricultural Research whose primary mandates are research and development on marine finfish farming, biotechnology and biodiversity having its registered office at Post Box No. 1603, Ernakulam North P.O. Ernakulam 682 018 (herein after referred to as "CMFRI") and represented by its Director

And

YENEPOYA, a Deemed to be University, whose primary mandates are 1) Education, 2) Research and development, 3) Outreach activities. The research activity focuses on stem cells and regenerative biology, translation of biotechnology, systems and computational biology. The University has its registered office at University Road, Deralakatte, Mangalore 575018, Karnataka (herein after referred to as "YU") and represented by its Registrar

Herein after individually referred to as a "Party" and collectively as the "Parties"

WHEREAS, the Parties will collaborate in the manner described in the following ARTICLES.

ATTESTED

Dr. Gangadhara Somayaji.K.S. Registrar Yenepoya/Deemed to be University University Road, Deralakatte Mangalore- 575 018, Karnataka



डॉ. ए. गोपालकृष्णन Dr. A. Gopalakrishnan निदेशक / Director केंद्रीय समुद्री मत्स्यिकी अनुसंधान संस्थान Central Marine Fisheries Research Institute को. सं. सं. 1603 / P. B. No. 1603 Ernakulam North P.O. Kochi - 682 018

NO. 1666 DATE 9.4.19 VALUE OF RS. 100 SOLD TO Director CMFRI

M.A. KUNJU BEEVI HIGH COURT VENDOR

Kochi

Registrar Yenepoya (Deemed to be University) University Road, Deralakatte Mangalore - 575 018



ARTICLE I
INTRODUCTION

- ICAR-CMFRI and YU agree to enter into a joint collaboration for biological research on various diseases including cancer especially for developing and optimizing therapeutics against cancer stem cells which epitomize the highly drug-resistant phenotypes in cancer.
- This Memorandum of Understanding (“MOU”) sets out below the principles by the ICAR-CMFRI and YU can establish a formal agreement regarding such activity.

ARTICLE II
FIELDS OF COMPETENCE

CMFRI is a leading marine fisheries research Institute in India with expertise in several branches of sciences, such as mariculture, biotechnology, marine natural products, medicinal chemistry backed up by world class analytical services and equipment for automated chemistry. CMFRI is working in the frontier area of bioactive molecule discovery from marine organisms as promising therapeutic agents against various diseases, food chemistry, aquatic food product technology, and development of high value products as dietary supplements and health management. The libraries of specialized bioactive compounds from marine organisms with anti-diabetic, anti-inflammatory, anti-hypothyroidism, anti-hypertensive and anti-dyslipidemic potential developed by this institute compose an abundant resource for future bioactivity research and will provide promising therapeutic leads against various human ailments.

YU is one of the premier deemed to be University in India with expertise in several branches of medical fields. Yenepoya Research Centre (YRC) of YU is an upcoming research centre that was established in 2008. YRC was initially established to serve as a central research support system for the constituent colleges. YRC has state-of the art facilities to support high quality research in the areas of Biotechnology, Regenerative biology, Systems and computational biology which are interdisciplinary/multidisciplinary areas to meet the contemporary challenges. The research work in YRC is primarily funded with extramurally received funds from various agencies of the Government of India, as well as, YU’s intramural funding. Stem cell and regenerative medicine centre (SCRMC) is a division under YRC having that undertakes specialized research work in the area of regenerative and cancer stem cell biology.

ARTICLE III
PRINCIPLES

The activities covered by this MOU will centre on the following:

- To develop newer, targeted delivery systems, cancer stem cell (CSC) and other pharmacological properties of targeting molecules by CMFRI.
- Isolation, maintenance, propagation of cancer stem cells by YU.
- Exchange of materials and cell lines between the CMFRI and YU can be initiated only after signing of Material transfer agreement (MTA).

ATTACHED

Dr.Gangadhara Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Deralakatte
Mangalore- 575 018, Karnataka



Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018



डॉ. ए. गोपालकृष्णन
Dr. A. Gopalakrishnan
निदेशक / Director
केंद्रीय समुद्री मत्स्यिकी अनुसंधान संस्थान
Central Marine Fisheries Research Institute
पो. बी. सं. 1603 / P. B. No. 1603
ए. ए. को. रो. / Pennakulam North P.O.
कोची - 682 018

- To conduct biological testing of the new chemical entities, pharmacophores and delivery systems synthesized or developed by CMFRI in YU.
- For the flow of research there will be exchange of students between the parties.
- Output of the results will be shared in the form of joint-co-authored research publications. The exchange of publications and other materials (related to publications and reports) is of common interest. For publication with equal participation the first authorship and corresponding authorship will be shared by both the institutes.
- All reports to be sent for publication arising out of the joint research will bear names of all the investigators from both the institutions who have directly participated in the study.
- Any activity carried out within the broad framework of this MOU shall be the subject to the mutual consent of parties, taking into account any constraints of time, funding and other relevant resources.
- It is recognized that the work carried out jointly through the collaboration will require special intellectual property protection. Legal agreements defining joint technology development will need to be implemented and will need to recognize the nature of the collaboration.
- For the entire duration of the 'Joint Collaboration' the partners undertake to seek each other's consent for the publication of any results arising from the research carried out by the Parties. This consent may only be withheld where justified.
- In case of IP generated out of the outcome of the joint research, it must be first patented by either of the parties before they go into its publication.
- If the outcome of the collaboration studies yields encouraging results useful to society or industry then, it can be pursued for attracting external funding from Govt./Pvt. agencies for advancement of the developed technology/process and for such purpose a joint research proposal can be submitted for extramural funding.
- The intellectual property rights arising out of the programme shall be the common property between the two organizations. CMFRI shall file the joint patent application, whereas the cost for patent application and maintenance will be equally shared by the parties, whereas and all the necessary support like the persons who have directly contributed to the intellectual property generation shall be mentioned as inventors by CMFRI and YU.
- The sharing of intellectual property among the two organizations shall be in the ratio of 50:50.
- The expenditure connected with securing and maintaining the Intellectual Property Rights shall be shared equally in the above said ratio by CMFRI and YU.
- The sharing of revenues, in case if it is licensed / commercialized shall be shared in the above said ratio between the two Institutes, namely 50:50 (CMFRI and YU).
- The pharmacophores and delivery systems provided by CSIR-IICT if found active in biological testing in CSCs and other pharmacological models, will also be tested in advanced animal models in YU after obtaining appropriate clearances from the Animal Ethics Committee.
- In addition, it is envisaged that each activity, that the parties wish to pursue in accordance with the purpose of this MOU will be governed by terms and conditions to be separately negotiated and mutually agreed upon by the parties through the signing of one or more subsidiary agreements.

ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Bealakarne
Mangalore- 575 016, Karnataka

डॉ. ए. गोपालकृष्णन
Dr. A. Gopalakrishnan
निदेशक / Director
केंद्रीय समुद्री मत्स्यिकी अनुसंधान संस्थान
Central Marine Fisheries Research Institute
पी. पी. नं. 1603 / P. B. No. 1603
ए. पी. नं. 1603, मंगलूर, कर्नाटक



G. Somayaji
Registrar
Yenepoya (Deemed to be University)
University Road, Bealakarne
Mangalore 575 016

ARTICLE IV
ASSISTANCE, COOPERATION AND GOOD FAITH OF THE PARTIES

The Parties acknowledge that the attainment of the Objectives is dependent upon the joint efforts of all parties through mutual trust and confidence and conducted in good faith. In this regard, the Parties shall endeavor to make available to the other such assistance as may be reasonably necessary, as they mutually determine, to attain the Objectives.


ARTICLE V
CONFIDENTIALITY; PROPRIETARY BRANDING

- A Party in receipt of Confidential Information from the other Party must not use or disclose the other Party's Confidential Information without that other Party's prior written consent other than (i) for the purposes of carrying out this MOU, provided any disclosure is only to such of the receiving party's personnel or to its related company and its personnel who need to know and who are made subject to the confidentiality requirements of this MOU or (ii) as required by law.
- Neither Party may make any public announcement in relation to this MOU without first obtaining the approval of the Other Party.
- Confidential information means (i) the terms of this MOU and (ii) all information (in whatever form) disclosed by one Party to the other, whether before or after the date of this MOU but excludes information which (x) is or becomes public knowledge other than through a breach of this MOU (y) the recipient can show to the discloser to have been in the recipient's lawful possession prior to disclosure or (z) the recipient can show to the discloser to have been lawfully received from a third party not obliged to keep that information confidential.
- Each Party shall not use any name, logo, trade name, trademark, service mark or other symbol associated with the other Party without the prior written consent of the other Party.


ARTICLE VI
NON-EXCLUSIVITY, RENEWAL, AMENDMENT AND TERMINATION


- This MOU does not intent to create an exclusive relationship between the parties in the field of research that parties intend to engage.
- This MOU shall be effective for an initial period of 5 years from this date. Thereafter, this MOU may be extended for further periods of 5 years or for any other period of time as deemed appropriate by both parties, subject to their mutual consent any such extension to be made in writing.
- Either Party may amend or vary this MOU at any time provided it is with the prior written consent of both Parties.
- Either Party may terminate this MOU at any time by giving six months notice to the other party in writing.

ATTESTED


Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Derlakatte
Mangalore- 575 018, Karnataka




डॉ. ए. गोपालकृष्णन
Dr. A. Gopalakrishnan
निदेशक / Director
केंद्रीय समुद्री माल्यिकी अनुसंधान संस्थान
Central Marine Fisheries Research Institute
पी. पी. नं. 1503 / P. B. No. 1503
एरणाकुलम नॉर्थ पी. ओ.
Ernakulam North P.O.
को. सं. 1503 एरणाकुलम नॉर्थ पी. ओ.


Registrar
Yenepoya (Deemed to be University)
University Road, Derlakatte
Mangalore 575 018

ARTICLE VII
CONFIDENTIALITY; PROPRIETARY BRANDING

- A Party in receipt of Confidential Information from the other Party must not use or disclose the other Party's Confidential Information without that other Party's prior written consent other than for the purposes of carrying out this MOU, provided any disclosure is only to such of the receiving party's personnel or to its related company and its personnel who need to know and who are made subject to the confidentiality requirements of this MOU.
- Neither Party may make any public announcement in relation to this MOU without first obtaining the approval of the Other Party.
- Confidential information means (i) the terms of this MOU and (ii) all information (in whatever form) disclosed by one Party to the other, whether before or after the date of this MOU.
- Each Party shall not use any name, logo, trade name, trademark, service mark or other symbol associated with the other Party without the prior written consent of the other Party.

ARTICLE VIII
FUNDING

The expense for the research work will be supported by funds from CMFRI & YU and will be jointly shared between the Parties/or other extramural funding granted in future for the Research Plan mentioned in this MOU.

The manpower and resources are anticipated to be met from the project funding. Each Party will execute its responsibilities from the resources available from the project with each institute.

ARTICLE IX
GENERAL

- The parties to this MOU shall not be deemed to be in breach of this understanding or otherwise liable to any other party in any manner whatsoever for any failure or delay in performing or initiating the activities proposed in this MOU.
- This MOU records the understanding between the parties and is not intended to be a legally binding document and shall not be enforceable in any court of law.

ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Derlakatte
Mangalore- 575 018, Karnataka



K. Somayaji
Registrar
Yenepoya (Deemed to be University)
University Road, Derlakatte
Mangalore - 575 018

[Signature]
डॉ. ए. गोपालकृष्णन
Dr. A. Gopalakrishnan
निदेशक / Director
केन्द्रीय समुद्री मत्स्यवर्षी अनुसंधान संस्थान
Central Marine Fisheries Research Institute
ए. बी. नो. 1603 / P. B. No. 1603
एरनाकुलम नोर्थ पो. ऑ./Ernakulam North P.O.
कोची - 682 018

IN WITNESS WHEREOF, the parties hereby affix their signatures on the date and place first above mentioned.

Signed by

Name: **Dr. A. GOPALAKRISHNAN**

Designation: **DIRECTOR**

Duly authorized to sign for an on behalf of:
CMFRI

Date: 07/05/2019



Signature

Dr. A. Gopalakrishnan
निदेशक / Director
केंद्रीय समुद्री यातियकी अनुसंधान संस्थान
Central Marine Fisheries Research Institute
पी. वी. सं. 1603 / P. B. No. 1603
एरणाकुलम नोर्थ पी.ओ./Ernakulam North P.O.
कोच्ची / Kochi - 682 018

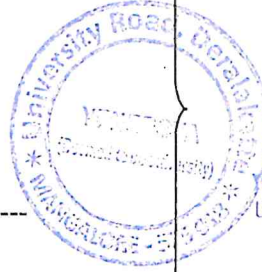
Signed by:

Name: **Dr. K.S. GANGADHARA SOMAYAJI**

Designation: **REGISTRAR**

Duly authorized to sign for and on behalf of:
YU

Date: 08/06/2019



Signature

Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore - 575 013

ATTESTED
Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore- 575 013, Karnataka