

S.N.M. COLLEGE, MALIANKARA

(Affiliated Mahatma Gandhi University, Kottayam)
Maliankara P.O., Moothakunnam Via, Ernakulam (DT), Kerala, India - 683516

3.RESEARCH, INNOVATIONS AND EXTENSIONS

3.2. INNOVATION ECOSYSTEM

3.2.1: Institution has created an ecosystem for innovations, Indian Knowledge System (IKS), including awareness about IPR, establishment of IPR cell, Incubation centre and other initiatives for the creation and transfer of knowledge/technology and the outcomes of the same are evident





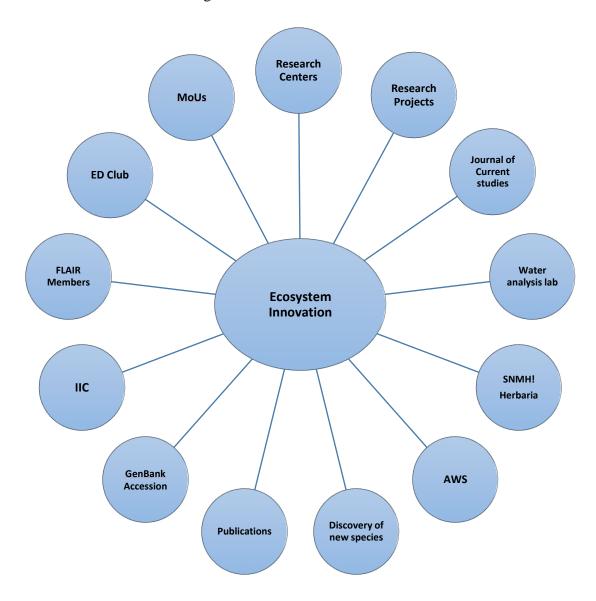
CONTENT

Sl No	Title	Page no.
1.	Research Centres	01
2.	Research Guides	03
3.	Research Scholars	04
4.	Research projects	10
5.	Publications	11
6.	Discovery of new plant species	20
7.	GenBank Accessions	21
8.	International Herbaria	22
9.	Journal of Current Studies	23
10.	Institution's Innovation Council	24
11.	Entrepreneurship Development Club	28
12.	FLAIR	33
13.	ASAP	34
14.	WWS	35
15.	Automatic Weather Station	37
16.	Water Analysis Lab	38
17.	Sree Narayana Study & Research Centre	39
18	MoUs & Collaborations	41



3.2. INNOVATION ECOSYSTEM

The institution makes better environment for innovation skills, scientific attitude among students and faculty members in different ways. Students and faculties are also encouraged to take part in different government-sponsored programmes for skill development. To encourage the creation of projects in real time, the college has signed MOUs with a few enterprises. Some of the innovations are following



1. Research Centres: 02 (Department of Botany and Department of Chemistry).

Institution has two research centres – Department of Botany and Department of Chemistry. The Department of Botany established in 1967. In the course of time, it has become a full-fledged department with post graduate course in Botany and a Research Centre affiliated to Mahatma Gandhi University, Kottayam. The Department

FIST programme. For about five decades after its establishment, the Department was recognized for teaching and research in the areas of Plant Taxonomy, Phytochemistry, Forest Ecology, Microbiology and Phycology. The members of the faculty are highly qualified and have specialization in different fields. Three research guides are serving for the department and they are engaged in serious research activities, undertaking various research projects funded by national and state level agencies. The department has sophisticated laboratories with several higher end model imported equipments. The Department is also conserving many endemic plants.

There are plenty of reputed international research papers have been published from the Department, which include fifty-six new to science angiosperm species under the auspicious of the doyen Dr. CN Sunil. An international herbarium (SNMHI) accredited by New York Botanical Garden with more than 6000 priceless accessions is also functioning here. Since 2019, our water analysis laboratory has been accredited by Kerala State Pollution Control Board. The department has been producing excellent results at the UG and PG level and it has produced several rank holders in the University examinations.

The department is providing quality education encompassing with passion and sincere attitude of faculty members. The latest programme organized by the department was a "Colloquium on Climate Change Impacts on Ecosystems" in collaboration with Advanced Centre for Atmospheric Radar Research , Kochi on 14.08.2023. Dr. Semeena, Scientist and Project leader at UK Centre for Ecology and Hydrology, Wallingford, UK and Dr. Abhilash S, Associate Professor of Atmospheric Sciences, CUSAT, Kochi, were the Invited speakers. Paper presentations by PG and Research Scholars were also conducted in the afternoon session, chaired by Dr. CN Sunil, Research Advisor to the department. Another recent programme was plastic waste collection along the estuarine banks of ward I of Vadakkekkara Panchayath, as a part of the campaign #BeatPlasticPollution, the theme of WED 2023. The faculty and students collected plastics and handed over to Ms. Shamol, Member of Vadakkekkara Panchayath and in charge of Haritha Karma Sena, on 05.06.2023.



2. Research Guides: 07

Institution has seven research guides in different subjects. Out of 7, two faculty members are Research Guides in External Centres.

Sl No	Name of the Research guides	Subject	Research Areas
1	Dr. C.N. Sunil (Retd.)	Botany	Angiosperm Taxonomy
2	Dr. C.M. Sreejit	Botany	Phytochemistry, Ethnobotany
3	Dr. Sanilkumar M.G.	Botany	Phycology
4	Dr. Baiju E.C.	Botany	Forest Ecology, Phytochemistry
5	Dr. Jitha T.H.	Malayalam	Feminism in Short Stories
6	Dr. Rekha Parthasarathy	Zoology	Environmental Toxicology
7	Dr. Resmi V.C.	Chemistry	Polymer Chemistry



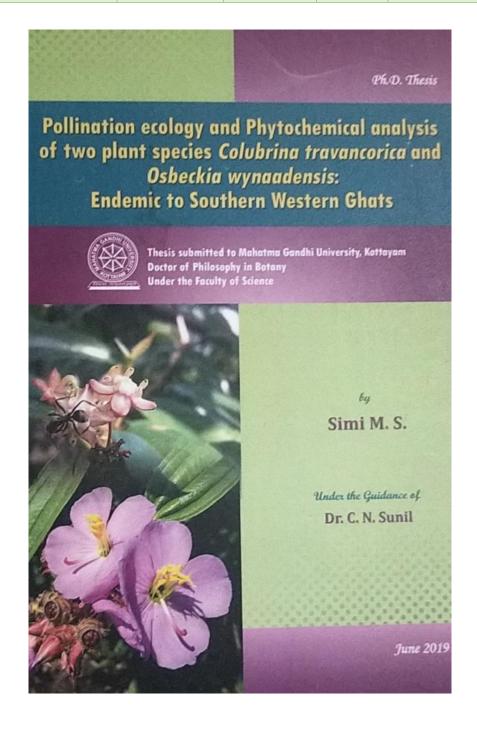
3. Research Scholars:

Five Scholars were awarded Ph.D from Department of Botany and currently, 12 scholars are pursuing Ph.D in different research themes.

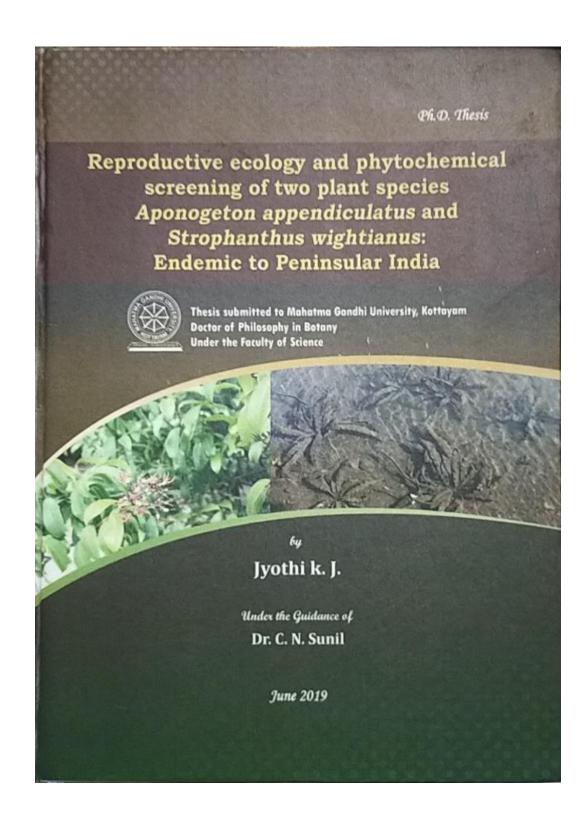
CI.	N C 41	N C 41	V	V 7 C	Title of the thesis
Sl No	Name of the Research Scholar	Name of the Research	Year of Registration	Year of Award	little of the thesis
110	Research Scholar	Guide	Registi ation	Awaru	
1	Simi MS	Dr. Sunil CN	2013	2020	Pollination ecology and phytochemical analysis of two plant species Colubrina travancorica and Osbeckia wayanadensis: endemic to Southern Western
2	Jyothi KJ	Dr. Sunil CN	2013	2020	Reproductive ecology and phytochemical screening of two plant species Aponogeton appendiculatus and Strophanthus wightianus: Endemic to Peninsular India
3	Naveenkumar VV	Dr. Sunil CN	2014	2021	Species diversity and plant resource mapping of angiosperms in Ernakulam district of Kerala
4	Nithya Madanan V	Dr. Sunil CN	2015	2022	A Comprehensive study on taxonomy and evaluation of Fodder Value of the Genus Ischaemum L. (Poaceae) in Kerala
5	Remyakrishnan CR	Dr Baiju EC	2014	2023	Angiosperm Species Diversity and Ecology of Wetlands of Thrissur District, Kerala
6	Jaiby Cyriac (Part Time)	Dr. C.M. Sreejit	2018	Ongoing	Biological effects off heavy metal nanoparticles on rice (Oryza sativa L.)

7	Meril Sara Kurian	Dr. C.M.	2019	Ongoing	Phytochemical and
		Sreejit			bioactivity studies of ten
					ethnomedicinal plants of Kerala.
8	Nadeshda K.S.	Dr. C.M.	2019	Ongoing	Bioprospection of
		Sreejit	,-,	9 8 8	phytoecdysteroids
		Sieejit			from Kerala flora
					and their biological effects in
					aquaculture
9	Akhila	Dr. C.M.	2021	Ongoing	Quantitative
	Raveendran	Sreejit			ethnobotany and biodiversity
		_			conservation
					strategies of
					medicinal plants
					used by tribal flocks of
					Kuttampizha
					region, Ernakulam
10	Di DV	D. M.C	2017	0	district.
10	Divya PV	Dr. M.G.	2016	Ongoing	Microalgae in the estuarine and
		Sanilkumar			inland waters of
					central Kerala.
11	Roshini T	Dr. M.G.	2017	Ongoing	Distribution and phytochemical
	Ramanan	Sanilkumar			analysis of
					intertidal
					macrophytes of Malabar coast
12	Priyanka MV	Dr. M.G.	2018	Ongoing	Ecology and
	•	Sanilkumar			diversity of
		~ ~~~~~~			microalgae along the lower reaches
					of Chalakudy
					River.
13	Lidiya VS	Dr. M.G.	2018	Ongoing	Biochemical
		Sanilkumar			characterization of diatoms of
					Azheekode Estuary
14	Asha A	Dr. Baiju EC	2019	Ongoing	Bioprotective
	(Part Time)				properties of Bleparistemma
					serratum (Dennst)
					Suresh
15	Sruthy Elsa Shibu	Dr. Baiju EC	2019	Ongoing	Phytochemical and
					pharmacological investigations on
					selected
					filamentous green
					algae

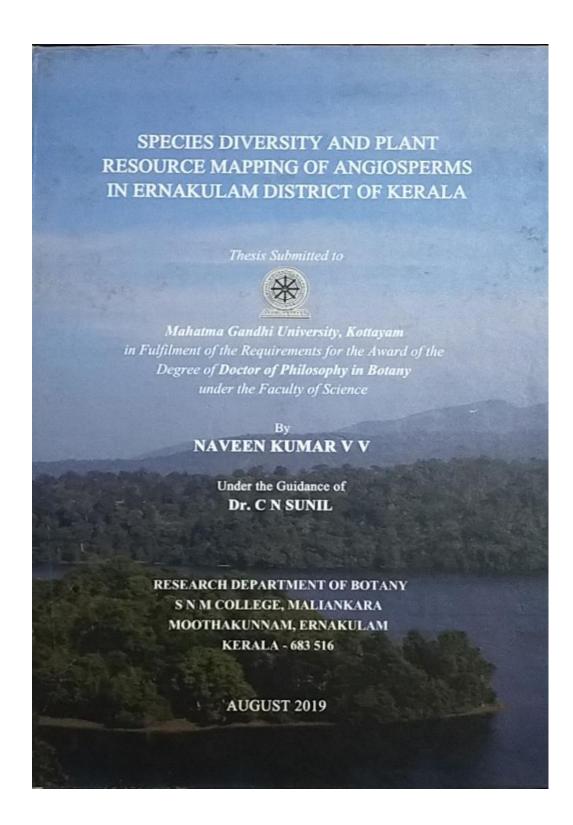
					(*()
16	Jesty Susan Joy	Dr. Baiju EC	2019	Ongoing	Micropropagation 3
		_			of Strophanthus
					wightianus Wall Ex
					Wight.
17	Anu T. Ranjeev	Dr. Baiju EC	2016	Ongoing	Angiosperm
	J				species diversity
					and ecology of
					wetlands of
					Thrissur district,
					Kerala



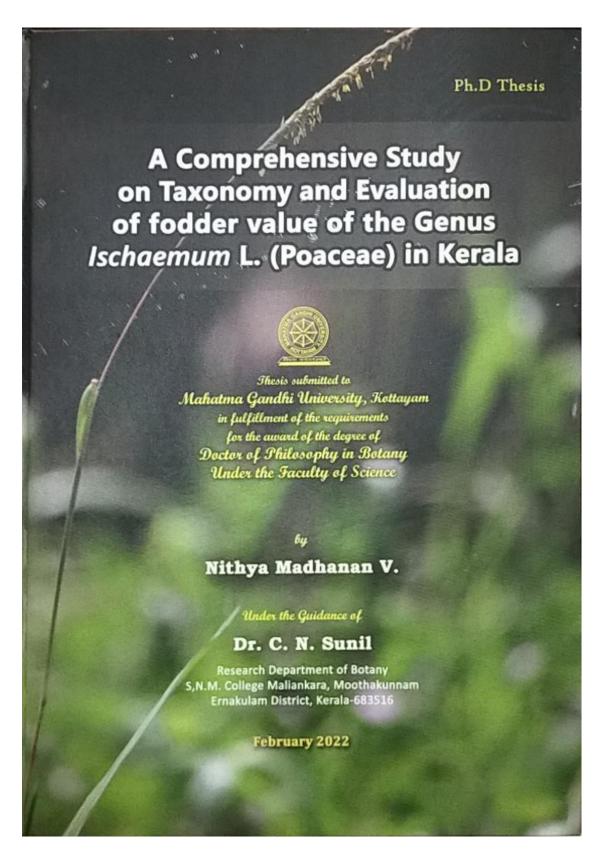














4. Research Projects

During the assessment period, one faculty from Department of Botany has completed one major project funded by Kerala State Council for Science, Technology and Environment, Thiruvananthauram. Three faculty members from Department of Physics had completed three student projects funded by KSCSTE.

Major Project	Name of the Faculty	Funding agency
Investigations on Algal	Dr. M.G. Sanilkumar	KSCSTE
Blooms in Central Kerala		

Student Project	Name of the Faculty	Funding agency
Influence of reaction	Dr. Neena P	KSCSTE
temperature on structural and		
optical properties of reduced		
graphene oxide.		
Source Detection using	Dr. Lakshmi S Bose	KSCSTE
GALEX satellite by Aperture		
Photometry method		
Characterization of reactive	Dr, Urmila K.S.	KSCSTE
evaporated SnSe thin films		
for photovoltaic applications		



5. Publications: 70

More than 70 research articles were published in national and International journals (Scopus, Web of Science and UGC carelist). Department of Botany secured 4 Genbank (NCBI) accession for algal specimens.

Links to papers published in Journal listed in UGC CARE list or SCOPUS or Web of Science

Sl No	Title of the Paper	Year	Name of the	Link of the
			Journal	Journal website
1	The 5I's of Virtual	Journal of	2022	https://doi.org/10.1
	Technologies in Laboratory	Science		<u>007/s10956-022-</u>
	Teaching for Faculties of	Education and		<u>09995-8</u>
	Higher Education in Kerala	Technology		
2	Histopathological impact of	Indian	2022	https://ivj.org.in/jou
	acetaminophen on liver of	Vet.Journal		<u>rnal-article-</u>
	Nile Tilapia			viewer/b05768ee-
				<u>63c9-488d-8541-</u>
				<u>c62c198e72a8/</u>
3	Insights into the role of	Journal of	2022	https://doi.org/10.5
	Moringa oleifera in	Vet. and		1966/jvas.2021.52.
	amleorating acetaminophen	Animal		<u>4.399-404</u>
	induced hepato toxicity in	Sciences		
	Nile Tilapa			
4	Seasonal diversity,	Entomon	2022	https://doi.org/10.3
	distribution and abundance			<u>3307/entomon.v47i</u>
	of Araneae in the Thattekkad			<u>3.763</u>
_	Bird Sanctuary, Kerala, India			
5	Band gap engineering of	Applied	2022	https://doi.org/10.1
	TiO2 by Mn doping and the	Physics A		<u>007/s00339-022-</u>
	effect of p-TNT: Mn/n-	(Materials		<u>06246-w</u>
	MnO2 heterojunction on	Science &		
	photocatalytic applications	Processing)		1 //1 / //1 // // // // // // // // // /
6	Influence of sodium doping	Optic	2022	https://doi.org/10.1
	on the material properties	Materials		016/j.optmat.2022.
	and photocatalytic activity of			<u>113172</u>
	anatase titanium dioxide			
	nanotubes prepared by			
7	anodization	D:	2022	1.44//1-:/10.1
/	Colocasia esculenta stems	Biomass	2022	https://doi.org/10.1
	for the isolation of cellulose	Conversion		007/s13399-022-
	nano fibers: a chlorine free method for the biomass	and		<u>03171-z</u>
	conversion	Biorefinary		
8	Ethylenen-Pproylene-diene	Material	2022	https://doi.org/10.1
0	(5-ethylidene-2-norbornene)	Today:	2022	https://doi.org/10.1 016/j.matpr.2022.0
	terpolymer/aluminium	Proceedings		9.369
	ciporymer/aiummum	riocceunigs		<u> </u>

0	hydroxide nano composites: Thermal mechanical and flameretardent characteristics	M-4 1	2022	1. through 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
9	Extragalactic UV radiation at different galactic latitudes	Material Today: Proceedings	2022	https://doi.org/10.1 016/j.matpr.2022.0 1.371
10	Structural and optical characterization of reactive evaporated Sn ₂ Sb ₄ Se ₈ thin films	Material Today: Proceedings	2022	https://doi.org/10.1 016/j.matpr.2022.0 1.104
11	Dynamic Rheological Behavior of Thermoplastic Elastomers from PA6,66 /EPDM Blends: Effect of Blend Ratio, Compatibilization and Dynamic Vulcanization	International Journal for Research in Applied Science and Engineering Technology (IJRASET)	2022	http://DOI: 10.48175/IJARSCT -4204
12	A novel taxon of the genus Ischaemum (Poaceae: Andropogoneae: Ischaeminae) from southern Western Ghats, Kerala, India	Phytotaxa	2022	https://doi.org/10.1 1646/phytotaxa.556 .2.7
13	A Study of the Extragalactic UV Radiation in Helix Nebula using GALEX	Walailak Journal of Science and Technology	2021	https://doi.org/10.4 8048/wjst.2021.239 82
14	Phytoplankton Diversity and Environmental Drivers in a Backwater Inlet of Central Kerala, Southwest India	Inland Water Biology	2021	https://DOI:10.113 4/s1995082921110 018
15	Fimbristylis sunilii (Cyperaceae): A new species from Southern Western Ghats, Kerala, India	Phytotaxa	2021	DOI: 10.11646/PHYTOT AXA.527.1.9
16	Neanotis prabhuii, a new species of Rubiaceae from Western Ghats, India	Phytotaxa	2021	DOI: 10.11646/PHYTOT AXA.527.3.8
17	Antimicrobial Activities of Natural and Recombinant Spider Silk – A Review.	Uttar Pradesh Journal of Zoology	2021	https://mbimph.co m/index.php/UPJO Z/article/view/1861
18	Photoinduced Electron Transfer in a Self-Assembled Bis(βcyclodextrin)-Linked Pyrene/Bis(adamantane)- Linked Methyl Viologen Donor–Acceptor System in Aqueous Solution	The Journal of Physical Chemistry B	2021	https://doi.org/10.1 021/acs.jpcb.1c005 81

				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
19	Self-Assembly and Photochemistry of a Pyrene- Methyl Viologen Supramolecular Fiber System	The Journal of Physical Chemistry B	2021	https://doi.org/10.1 021/acs.jpcb.1c044 17
20	Bulbostylis maritima—A new species of Cyperaceae from coastal Kerala, India	Phytotaxa	2020	https://doi.org/10.1 1646/phytotaxa.430 .1.8
21	Flood Impact on Water Quality Parameters at Vadekkekara Panchayath-A Brief Study	International Journal for Research in Applied Science and Engineering Technology (IJRASET)	2020	http://doi.org/10.22 214/ijraset.2020.53 07
22	Carboxymethylcellulose hybrid nano dispersions for edible coatings with potential anti-cancer properties	International Journal of Biological Macromolecu les	2020	https://doi.org/10.1 016/j.ijbiomac.202 0.04.175
23	Correlation between Morphology and Mechanical Properties of TPEs from PA (6, 66) / EPDM Blends	International Journal for Research in Applied Science and Engineering Technology (IJRASET)	2020	http://doi.org/10.22 214/ijraset.2020.10 33
24	Co-Continuous Structures in Melt-Mixed PA(6,66) / EPDM Blends	International Journal of Scientific Research and Engineering Development	2020	http://www.ijsred.c om/volume3/issue2 /IJSRED- V3I2P97.pdf
25	Synthesis of biogenic ZnO nanoparticles and its impact on seed germination and root growth of Oryza sativa L. and Vigna unguiculata L	Materials Today: Proceedings (Elsevier)	2020	https://doi.org/10.1 016/j.matpr.2020.0 1.107Get rights and content
26	Gentiana sasidharanii (Gentianaceae), a new species from Western Ghats, India	Phytotaxa	2020	https://doi.org/10.1 1646/phytotaxa.443 .3.6

				*\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
27	Hedyotis shoolamudianus (Rubiaceae), a new species from Western Ghats, India	Phytotaxa	2020	DOI:10.11646/phyt otaxa.438.2.10
28	Chindavishtayaya Seetha - Punaravalokanam	Thudi	2020	Offline
29	Lakshmi bhayiyile pennezhuthukal	Sahithyaloka m	2020	Offline
30	Structural Deformation to β- Cyclodextrin Due to Strong π-Stacking in the Self- Assembly of Inclusion Complex	Chemistry Select	2020	https://doi.org/10.1 002/slct.202004488
31	Effect of blend ratio and compatibilisation on the electrical and dielectric properties of nylon copolymer (6, 66)/EPDM rubber blends	Polymer Engineering Science	2019	https://doi.org/10.1 002/pen.25222
32	Compatibilising action of multiwalled carbon nanotubes in polycarbonate/polypropylene (PC/PP) blends: phase morphology, viscoelastic phase separation, rheology and percolation	Journal of Polymer Research	2019	http://DOI:10.1007/ s10965-019-1833-2
33	Traditional Knowledge of Medicinal Plants used in Gastrointestinal Ethnic Therapeutics by the Kuruchiar Tribe of Wayanad District, Kerala, Western Ghats	International Journal of Research and Analytical Reviews	2019	http://ijrar.org/view full.php?&p_id=IJ RAR19J3837
34	Documentation of traditional knowledge regarding medicinal plant use for various ailments including veterinary purpose by a less documented indigenous tribe – Adiyan – in Wayanad district, Kerala, Western Ghats	International Journal of Research and Analytical Reviews	2019	http://ijrar.org/view full.php?&p_id=IJ RAR19J3856

				(*\ *\)
35	Ethnobotanical Inventorying	International	2019	http://ijrar.org/view
	of Plant Use Data for various	Journal of		full.php?&p_id=IJ
	Ailments among an	Research and		<u>RAR19J4068</u>
	Indigenous Tribe -	Analytical		
	Kattunaikkan in Wayanad	Reviews		
	District, Kerala, Western			
	Ghats			
36	A Study on the Ethno	International	2019	https://doi:10.2221
	botanically Important Plants	Journal for		4/ijraset.2019.3444
	used by the Mullakuruma	Research in		
	Indigenous Tribe for Various	Applied		
	Ailments in Wayanad	Science and		
	District, Kerala	Engineering		
	_ =====================================	Technology		
		(IJRASET)		
37	Quantitative Analysis of the	International	2019	https://doi.org/10.2
0,	Medicinal Plant use Data by	Journal for	_017	2214/ijraset.2019.4
	Four Indigenous Tribes-	Research in		106
	Kattunaikkan,	Applied		100
	Mullakuruman, Adiyan and	Science and		
	Kuruchiyar - of Wayanad	Engineering		
	District, Kerala, Western	Technology		
	Ghats	(IJRASET)		
38	Comparative Study on the	International	2019	http://ijrar.org/view
36	Medicinal Plant Use Data by	Journal for	2017	full.php?&p id=IJ
	Four Indigenous Tribes-	Research in		RAR19J3856
	Kattunaikkan,	Applied		
	Mullakuruman, Adiyan and	Science and		
	Kuruchiyar of Wayanad	Engineering		
	District, Kerala	Technology		
20	D:	(IJRASET)	2010	1.44
39	Bioprospection of some Medicinal Plants used in the	International Journal for	2019	http://ijrar.org/view
	Traditional System	Research in		full.php?&p_id=IJ RAR19J4068
	Ayurveda, for the Wonder	Applied		10111734000
	Drug-Ecdysterone	Science and		
	j	Engineering		
		Technology		
		(IJRASET)		
40	Quantitative indices - use	Journal of	2019	https://doi:10.2221
	value, family use valueand	Emerging		<u>4/ijraset.2019.3444</u>
	Shannon Weiner index - applied on medicinal plant	Technologies and		
	use data collected from four	Innovative		
	indigenous tribes of	Research		

	Wayanad district, Western			
	Ghats, India			Constituting to the state of th
41	Isolation, quantification and chemical characterisation of ecdysterone from medicinal plants of Kerala, Western Ghats	Journal of Pharmacogno sy and Phytochemist ry	2019	https://doi.org/10.2 2214/ijraset.2019.4 106
42	Hedyotis indirae (Rubiaceae), a new species from Western Ghats, India	Webbia Journal of Plant Taxonomy and Geography	2019	DOI: 10.1080/00837792. 2019.1641298
43	Indigenous knowledge of coastline sacred groves in Central Kerala, India	Indian Journal of Traditional Knowledge	2019	DOI: 10.56042/ijtk. v18i3.26741
44	Inter fjord variations as a key contributor in the meiobenthic faunal distribution in the Arctic Kongsfjord, Svalbard	Regional Studies in Marine Science	2019	https://doi.org/10.1 016/j.rsma.2019.10 0817
45	Political Potentials of Body in the Postmodern Context.	Journal of the Gujarat research Society	2019	http://gujaratresear chsociety.in/index. php/JGRS/article/vi ew/631/511
46	Breaking The Cultural Codes: The Bodily Play From The Fringes	Think India Journal	2019	https://thinkindiaqu arterly.org/index.ph p/think- india/article/view/1 4923
47	Marketing strategies of public and private organized retailers in Kerala - A comparative study	International Journal of Emerging Technologies and Innovative Research	2019	https://www.jetir.or g/papers/JETIR190 3356.pdf
48	Controlling the zinc oxide unipolarity through dual acceptor doping for spraycast homojunction diode	Materials Letters	2019	https://doi.org/10.1 016/j.matlet.2018.1 1.157
49	Priya A S nte kadhakalile Streepakshabhashanangal	Kavanakaum udhi	2019	https://www.newsp apers.in/newspaper s_details/ref_id- 47878/language- malayalam/periodic ity- quarterly/district- kozhikode/state- kerala

				(*(
50	Hierarchical Self-Assembly of Pyrene-Linked Cyclodextrin and Adamantane-Linked Naphthalene Diimide System: A Case of Inclusion- Binding-Assisted Charge- Transfer Interaction	Chemistry Select	2019	https://doi.9rg 0.2 002/slct.201803166
51	New host and geographical record of Eudactylina pusilla Cressey, 1967 from Indian waters with DNA barcodes	Journal of Fisheries	2019	https://doi.org/10.1 7017/j.fish.4
52	First Record of Gloiopotes watsoni Kirtisinghe, 1934	I3 Biodiversity	2019	https://www.researc hgate.net/publicatio n/344070685 First Record_of_Gloio potes_watsoni_Kirt isinghe_1934 para sitic_on_Istiophoru s_platypteursShaw and Nodder_1792 from_Andaman_S ea_with_DNA_bar codes#fullTextFile Content
53	Biosynthesis and characterization of silver nanoparticle against food borne pathogens	International Journal of Green and Herbal Chemistry	2018	https://DOI: 10.24214/IJGHC/G C/7/4 /80313.
54	Bioprospection of Kerala Flora for the Multipurpose Drug - Phytoecdysoids	Journal of Biological and Chemical Research	2018	https://jbcr.co.in/Current_Issue/Volume %2035%20(1)%20 Part%20A,%20Jan uary%20to%20Jun e%202018/15.%20j bcr%20%20paper %20final%20115- 123.pdf
55	Effect of phyto ecdysteroids isolated from Diploclisia glaucescens (Blume) Diels and Coscinium fenestratum (Gaertn.) Colebr. and juvenile hormone analogue isolated from Cullen on economic parameters of Bombyx mori L.	International Journal of Current Advanced Research	2018	http://dx.doi.org/10 .24327/ijcar.2018.1 0752.1836

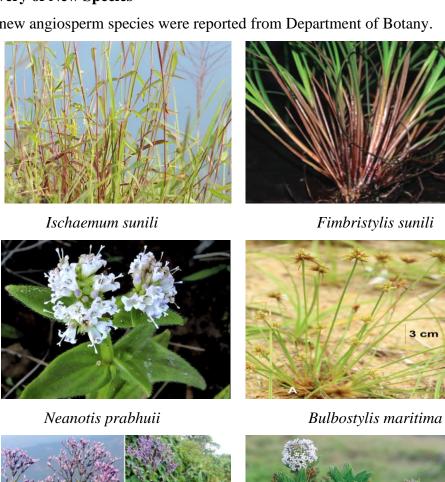
	T: 1	DI I	2010	
56	Fimbristylis griffithii (Cyperaceae), a new record for Peninsular India	Rheedea	2018	https://dx.doi.org/1 0.22244/rheedea.20 18.28.2.25
57	GC-MS analysis and nutrient evaluation of rare, endemic and threatened species- <i>Aponogeton appendiculatus</i> V. Bruggen of South India	Indian Journal of Scientific Research	2018	https://ijsr.in/uploa d/1959073826Chap ter_2.pdf
58	Floral Phenology and Breeding System of Aponogeton appendiculatus (Aponogetonaceae)	The International Journal of Plant Reproductive Biology	2018	DOI 10.14787/ijprb.201 8 10.2.
59	Chemical profiling of endemic plant <i>Osbeckia</i> wynaadensis Clarke. By gas chromatography –mass spectrometric method	Indian Journal of Scientific Research	2018	https://www.ijsr.in/ upload/149499378 3Chapter_16.pdf
60	Pollination biology of Osbeckia wynaadensis C. B. Clarke (Melastomataceae)- an endemic plant in Southern Western Ghats.	The International Journal of Plant Reproductive Biology	2018	DOI 10.14787/ijprb.201 8 10.2.
61	Eriocaulon tuberiferum (Eriocaulaceae) A New Record for South India	Nelumbo (BSI)	2018	DOI: 10.20324/nel umbo/v60/2018/11 8166
62	On the identity and distribution of <i>Vasconcellea</i> pubescens (Caricaceae) in Asia	Nelumbo (BSI)	2018	DOI: 10.20324/nel umbo/v60/2018/13 2421
63	Phytochemical profiling and antibacterial activity of selected <i>Sida</i> species against common human pathogenic bacteria: An in vitro study	Journal of Pharmacogno sy and Phytochemist ry	2018	https://www.phytoj ournal.com/archive s/2018/vol7issue3/ PartQ/7-3-38- 422.pdf
64	Ethnomedicinal flowering plants used by Kurumas, Kurichiyas and Paniyas tribes of Wayanad District of Kerala, India	International Journal of Biology Research	2018	https://www.biolog yjournal.in/assets/a rchives/2018/vol3is sue3/3-3-14- 729.pdf
65	Composition and distribution of meiobenthos in Arctic Kongsfjord (Svalbard) with reference to carbon potential of selected fauna	Indian Journal of Geo- Marine Sciences	2018	https://nopr.niscpr.r es.in/bitstream/123 456789/44122/1/IJ MS%2047%283%2 9%20613-622.pdf

				<u>*</u>
66	Marketing strategy of Telecom retail sector - a comparative study between BSNL and private operators.	International journal of Multidisciplin ary Approach and Studies	2018	http://ijmas.com/up/comingissue/01.01. 2018.pdf
67	Post-deposition thermal treatment of sprayed ZnO:Al thin films for enhancing the conductivity	Physica B: Physics of Condensed Matter	2018	https://doi.org/10.1 016/j.physb.2018.0 1.004
68	Strain induced optical properties of perovskite LaFeO3	Materials Research Express	2018	https://doi.org/10.1 088/2053- 1591/aae857
69	A Statistical Approach to Optimize Cold Active β- Galactosidase Production by an Arctic Sediment Pscychrotrophic Bacteria, Enterobacter ludwigii (MCC 3423) in Cheese Whey	Catalysis Letters	2018	https://www.spring er.com/journal/105 62
70	Functional Characterization of a New Cold-Adapted β- Galactosidase from an Arctic Fjord Sediment Bacteria Enterobacter ludwigii MCC 3423	Catalysis Letters	2018	https://www.spring er.com/journal/105 62



6. Discovery of New Species

Eight new angiosperm species were reported from Department of Botany.





Hedyotis shoolamudianus



Fimbristylis grifithii



3 cm

Hedyotis indirae



Gentiana sasidharani



7. GenBank Accession

GenBank is the NIH genetic sequence database, an annotated collection of all publicly available DNA sequences. GenBank is part of the International Nucleotide Sequence Database Collaboration, which comprises the DNA DataBank of Japan (DDBJ), the European Nucleotide Archive (ENA), and GenBank at NCBI. These three organizations exchange data on a daily basis. A GenBank release occurs every two months and is available from the ftp site. The release notes for the current version of GenBank provide detailed information about the release and notifications of upcoming changes to GenBank. Release notes for previous GenBank releases are also available. GenBank growth statistics for both the traditional GenBank divisions and the WGS division are available from each release.

Following are the GenBank accessions reported from the institution

GenBank: OP185708.1

GenBank: OQ064506.1

GenBank: OQ389490.1

GenBank: OQ383875.1



8. International Herbaria SNMH!

Our institution has an international herbarium SNMH!, accredited by New York Botanical Garden (NYBG) is functioning in the research department of Botany. It contains more than 6000 accessions, which may be the largest of its kind, among colleges of Kerala. The herbarium is widely used by Post Graduate students, Research Scholars and Taxonomists. SNMH! contains more than 6000 accessions, which may be the largest of its kind, among colleges of Kerala. Approximately, 90% of its digitization process is over. The herbarium is widely used by PG students, research scholars and taxonomists.



Sree Narayana Mangalam College Herbaria (SNMH)



9. Journal of Current Studies (JCS):

Journal of Current Studies, (JCS - ISSN 2277-2707) is a double-blinded referred and peer-viewed academic research journal in all the streams. Advancement in science and technology has improved the physical quality of human life and has come to dominate every sphere of human activity. "Journal of Current Studies" provides a solid forum to developments in science and humanities and literature, and its impact on modern society. The journal analyses the implications of science polices, evaluates the environmental issues involved in the application of technology without human face and suggest alternatives. It also provides opportunity for academics to interact and evolve sustainable strategies for a better society. The objective of this journal is to provide a venue for academic research scholars, post graduate students in universities/colleges and other centers of research to publish current and significant research as well as other publication activities.







2023 2020 2018



10. Institution Innovation Council (IIC)

The benefit of IIC is to students can interact with renowned business leaders and topnotch academicians. The students were encouraged to participate in Young Innovation Programme (YIP).

Institution's Innovation Council (IIC) program is an initiative of the Ministry of Education (MoE) through MoE's Innovation Cell (MIC) in collaboration with AICTE for Higher Educational Institutions (HEIs) to systematically foster the culture of innovation and start-up ecosystem in education institutions. The council is to foster the culture of a vibrant innovation and start-up ecosystem in our institution and to enhance better cognitive ability among students. The pivotal role is to encourage, inspire and nurture students and the faculty community by supporting them to work with new ideas. SNMC established IIC Cell in the academic year 2022-23 to fostering the culture of a vibrant innovation and start-up ecosystem in our institution and to enhance better cognitive ability among students. The benefit of IIC is to interact with renowned business Leaders and top notch academicians. Mentoring by Industry Professionals are also available as well as able to win certificates and prizes frequently.

SNMC will be known to have an innovative, enjoyable and holistic learning environment that transforms individuals into socially conscious citizens and enhances employability and life skill development. The mission of IIC is to cultivate a spirit of intellectual creativity and inquisitiveness, to develop creative and independent thinkers, who are capable and confident global citizens, to conduct different curricular and co-curricular activities to enhance the academic as well as extension activities and provide a diverse and stimulating environment for staff and students to grow holistically. IIC conducted conduct various innovation and entrepreneurship related activities prescribed by Central MIC in time bounded fashion, identified and reward innovations and share success stories, organized periodic workshops/seminars/ interactions with entrepreneurs, investors, professionals and create a mentor pode for student innovators. On 6/8/2022, Some faculties of our college participated in Regional Meet of IIC at KMEA Engineering College, Edathala.



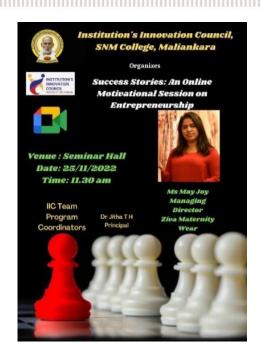




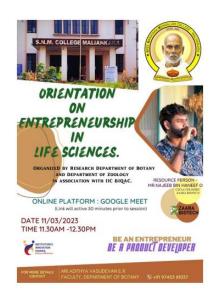
Fashion designing emerge as a new arena in the career opportunities of youth with the new ways and style of living, triggering creativity and passion among youth. Institution's Innovation Council in association with Dreamzone, Kodungalloor organized a workshop 'Fashion Design is My Passion' on 28/10/2022 for our students. The prime aim of the event was to inculcate entrepreneurial motives in fashion designing among the young generation. After the welcome speech by Ms Juveena A R of III BA English, presidential address was given by Dr Jitha T H, Principal in charge of our college. Ms Antara Battacharya, National Head, Dreamzone School of Fashion Design, Chennai presented the topic before our students. She elaborated on the career opportunities the arena of Fashion Designing. It was followed by an interactive session with Ms Hisana, faculty of Fashion Design, Dreamzone, Kodungallur. The session proved to be a lively one with the active participation of our students. The session was an inspiration for students for resuming new ventures in entrepreneurship.

Institution's Innovation Council, SNM College, Maliankara organised an online motivational session titled 'Success Stories: An Online Motivational Session on Entrepreneurship' on 25/11/2022 to inspire students to embrace the arena of entrepreneurship, which demands creativity and passion. The session was organised through the online platform google meet and was handled by Ms May Joy, Managing Director, Ziva Maternity Wear, who motivated our students with her own life experiences in the field of fashion designing, entrepreneurship and innovation. The students actively participated in the event which nurtured their innovative ideas.





National Education Day celebrated on November 11 every year to commemorated the birth anniversary of Maulana Abdul Kalam Azad, the first Education Minister of India. Institution's Innovation Council at SNM College, Maliankara celebrated National Education day on November 11, 2022. The quotes of Maulana Abdul Kalam Azad was displayed on the notice board of our college to mark the significance of the event. IIC organised an essay writing competition on the topic "Students and Changing Education System". The UG and PG students of our college actively participated in the competition.





As part of energy conservation day celebrations 2022, Energy Conservation Society Student's Chapter & Department of Physics organized an "Awareness Class on Energy Conservation" in association with Institution's Innovation Council of SNM College, Maliankara on 13th December 2022 at 10:30 am at seminar hall. Principal Dr. Jitha T H delivered principal's message. The resource person of the programme was Mr. K.M Shanavas, Joint Director of Kerala State Productivity Council, Kalamassery. In the talk he discussed about the fundamentals of energy conservation and energy efficiency, various ways of reducing power consumption in households, present statistics of energy consumption in kerala, problems that we may face in future on increased usage of energy and so on. The talk was useful for students and they cleared their doubts with the speaker during the interaction session. Nearly 20 students attended the programme.



11. Entrepreneurship Development Club (EDC)

Entrepreneurship is the indicator of countries' economic development and social wellness. The Department of Industries and Commerce, Government of Kerala, in association with Education Department formulated a Scheme to set up Entrepreneurship Development Clubs in colleges of the state to inculcate entrepreneurship Culture among the Youth. The Entrepreneurship Development Club in S N M College Maliankara functioning for the students to develop Entrepreneurial spirit and equip them with the skills, techniques and confidence to act as torch-bearers of Enterprise for the new generation. The club was established in the college under the Department of Economics in the academic year 2019-2020. The Club has been functioning at college in association with Department of Industries & Commerce, Government of Kerala. The club is registered with the District Industries Centre and it got e registration number EDC/EKM/67/19 in 2019 and also got financial assistance in 2022.

The formal inauguration of the Club activities of the academic year 2022-2023 held on October 21, 2022, 10.00 a.m. at seminar hall of the college by Mr.Bijoy P R, entrepreneur and MD Ponkathir food products. Ms. Nitha A U, Assistant Professor and coordinator of ED Club, S.N.M college, Maliankara delivered a welcome address. Nikhil M B, Assistant Professor and Head, Department of Economics presided the session and gave an overview of the function of the club in the college. Dr. T H Jitha, Principal In charge, S.N.M College Maliankara delivered the Key Note Address. He remarked the importance of Entrepreneurship Development and the need of inculcate Entrepreneurial Culture amongst youth in the current global scenario. This was followed by the lighting of the lamp by the Chief guest and thereby officially launching the Club activities for this academic year. During his speech, Mr Bijoy highlighted the importance of the moulding the right young entrepreneurs to support the industrialization process of the state with a competitive edge. Mr. Bijoy interacted with the students and a number of questions and doubts were asked as a prat of interaction, Mr. Bijoy explained his path to become a successful entrepreneur, and how he deals with the tough situations in his life journey as entrepreneur.

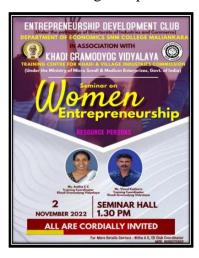


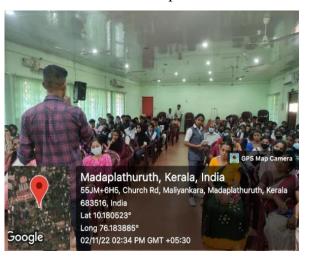






Women-owned business enterprises are playing a prominent role in society by generating employment opportunities in the country. On 2nd November, 2022 Club successfully organized one day Seminar on "Women entrepreneurship" in collaboration with Khadi Gramodyog Vidyalaya, Training Centre for Khadi and village industries commission, under the Ministery of Mico Small and Medium Enterprise Govt. of India. Sessions were conducted by Ms. Anitha C C and Mr. Vinod Kakkara, training cocoordinators of Khadi Gramodyog Vidyalaya. 120 participants from various categories such as students of our college, faculties and Kudumba Sree workers of the village adoption wards are attended the workshop.





Seminar enhance their knowledge in the field of women entrepreneurship and throw light on different enterprises they can start with low cost and training. Club is planning to start a training course in collaboration with Khadi Gramodyog Vidyalaya, Training

Centre for Khadi and village industries commission for interested students of college.

The ED Club of S.N.M College, Maliankara organized an Invited Talk on "Journey as a woman entrepreneur by Ms. Vinumol Manoj, Academic Director, Winners Coaching Institute, Thrissur on 10th March 2023, Friday, 10 am at Seminar hall of the college in connection with "International women's Day". The program started with a prayer song by Ms. Aswani Bijesh, ED Club student member and Ms. Nitha A U, Coordinator of the ED Club, delivered the welcome note.

The program was presided by Rev. Principal Dr. Jitha T H and Mr. Nikhil M B, Head, Department of Economics delivered felicitation speech. The resource person shared her entrepreneurship journey and explained how entrepreneurs see a problem as an opportunity for business. The speaker spoke about her startup and challenges she faced as an entrepreneur. She also interacted with the students through varied type of questions made them realize how and where good qualities are very important in sustaining in entrepreneurship. She also alerted them to the truth that there are umpteen number of abilities within them that go unnoticed. The session was concluded with the vote of thanks of Ms. Megha P B, ED Club student member. 85 students from different departments successfully participated in the program and provide positive feedback on the program.





The Entrepreneurship Development Club of S.N.M College, Maliankara has organized a webinar on "Marketing for entrepreneurs" on 30th May 2023 at 10.00 AM, through the Google meet platform. The lecture in this webinar was given by Mr. Nidhin Johny, Assistant Professor, Albertian Institute of Management. Mr. Nikhil M

B, Assistant Professor and Head, Department of Economics chaired the session and Ms. Nitha A U, ED Club co-ordinator delivered welcome address. Mr. Nidhin Johny has delivered a lecture on the topic" Marketing for entrepreneurs". He explained about the importance of marketing in business. He specifically focused on different types of marketing technique can be used by entrepreneurs to increase the demand for their product and run their business without any loss.





ED Club of S.N.M College Maliankara had organized an industrial visit on 26 May, 2023 to GK Packing located in Kottaikovilakam, Kerala for the members of ED Club. Ms.Nitha A U, ED Club coordinator was the organizing Faculty of the industrial visit. We started travelling from the college campus at 9:30 am. Totally 16 students along with coordinator faculty were there in the journey. It provides students with an opportunity to learn practically through interaction, working methods and employment practices. It gives them exposure to current work practices as opposed to possibly theoretical knowledge being taught at college. Industrial visits provide an excellent opportunity to interact with industries and know more about industrial environment. Industrial visits are arranged by colleges to students with an objective of providing students functional opportunity in different sectors like Manufacturing and services, finance and marketing. Industrial visit helps to combine theoretical knowledge with industrial knowledge. Manufacturing realities are opened to the students through industrial visits.





Recycling and reusing the waste material can result in creation of beautiful and usable products, rather than putting these waste materials into the wastebins. Waste materials can be transformed in to useful products by using various innovative and creative ideas and able to start a new ecofriendly entrepreneurship. The club organized an exhibition on DIY products made using waste materials as part of the ARTHA Exhibition conducted by the Department of Economics, S N M College, Maliankara on 24/01/2020 at CB 206, from 10.30 a.m. to 3.30 p.m. Students are able to craft and showcase a number of fantastic and useful products from waste materials in the exhibition hall and captured attention of the all visitors. The DIY exhibition sent a powerful message regarding the ability to think outside the box or syllabus. Feedback of the students and teachers visited the exhibition hall was very positive. Students made DIY products shared the opinion that it was a wonderful experience for them.





Website Link



12. FLAIR

Fostering Linkages in Academic Innovation and Research (FLAIR) is an intitiative of Kerala State Higher Education Council (KSHEC). Faculty members of Government Arts and Science and Engineering Colleges and University Departments who have less than five years of service and at least 20 years of remaining service will be eligible to become FLAIR members in the first year of the programme. Joining the FLAIR system is voluntary and academics with a commitment and a zest for development would be the potential target group. Faculty members received various type of orientation programmes and internships from IITs and other Universities. Four faculty members are currently volunteer faculty of FLAIR. List of faculty members of FLAIR is given below:

Name of the faculty	Designation	Department
Dr. Neena P.	Assistant Professor	Physics
Dr. Baiju E.C.	Assistant Professor	Botany
Archana K.S.	Assistant Professor	Zoology
Nikhil M.B.	Assistant Professor	Economics

Another faculty member from Department of Economics –Nitha A.U., Assistant Professor is recipient of **K N Raj Training and Fellowship** to improve the curriculum and teaching of Economics in Colleges.

The institute has taken the initiative to encourage the faculty members to pursue their Ph.D. study and 15 teaching faculty are pursing Ph.D in various subjects from different universities of Kerala.



13. ASAP (Additional Skill Acquisition Programme)

ASAP has been functioning in S.N.M college since 2016 onwards. At Level 1, ASAP imparts 300 hours of skill training to selected first year students (30 per batch, maximum 2 batches in an institution). Of this, 180 hours will be a foundation module comprising of Communication Skills and IT skills and the remaining 120 hours will be the module related to the skill sector chosen by the student. The Programmes are developed, delivered, assessed and certified with the active participation of the related industries to ensure labour market acceptance of the programmes. By imparting communication skills in English and Basic IT courses to a large student community, the project envisages to create a large talent pool that can work in modern day organizations that promote a global work environment. By choice, student groups receive sector specific skills that further enable them to be employable and industry ready. Earlier students were also given industrial training but from the current academic year due to change in the ASAP policies the thirty five first year degree students of our college selected through interview by the ASAP team were only given 150 hours training in Communicative English and IT by ASAP skill trainer Ms. Varsha Manoj from 3:30 PM to 4:30 PM on all working days at the college. On the completion of the training students were assessed at the ASAP skill centre, Aluva and issued certificates. A model of the certificate received by the students is attached with this report.





14. Walk With Scholar (WWS)

Walk With a Scholar (WWS) programme is envisaged to provide necessary orientation, guidance and motivation to the promising students so as to enrich and nourish their talents for higher studies and better employment. Under the "New Initiatives in Higher Education" of the department of Collegiate Education, Government of Kerala, a specialized mentoring programme called Walk With a Scholar started in this college from 2016-17 academic year. It has been observed that the students in Arts, Science and Commerce Colleges do not get necessary orientation to prepare them for employment or guidance necessary to select areas for higher study. Walk With a Scholar (WWS) scheme proposes to arrange specialized mentoring programs for students in Under Graduate Programs in Arts, Science and Commerce and to provide guidance for their future. The scheme introduces the idea of mentoring and builds on the concept of mentor as a 'Guide' and 'Friend'. The mentoring scheme should be planned to identify the opportunities available for the scholars, the areas suitable for them, the manner in which the scholar should proceed before them and evolve ways by which they can be acquired. The mentoring scheme for students will be purely voluntary in nature. It will be open for all students entering the first year of the Under Graduate Programme of Study. The Scheme aims at giving necessary orientation to needy students, to prepare them for employment and give them necessary guidance, motivation and necessary mental support to identify appropriate areas for higher study as well as employment. Thirty students from First year of the UG programme will be selected to this scheme and divided into groups. For the purpose of mentoring, two categories of mentors are identified: 'Internal Mentors' and External Mentors'. Internal Mentors are faculty from the College itself and they are persons who are able to do mentoring and support the scholars and act as a guide in building their career. External Mentors are reputed persons outside the College and from various professions. Their experience and expertise will help the students to identify a better career option.

During the academic year 2019-20, the WWS team compromising 30 students (I &II year Scholars) and 15 Internal mentors and WWS Co-ordinator attended the function. The topic was on Art & Self-development. The Mentor divided students into different groups and given many group activities which has made the students active and energetic.









The Mentor –Students interaction was very lively. The mentor had a very energetic session with the students and given some activities which can easily identify the Art and Self-development. The Mentor had given some topics for group discussion about Gender Issues. Students were participated in the discussion actively. The mentor motivated them to bring up their dreams with hard work, self-motivation through art. To bring an awareness about our constitution and democratic values among students, a discussion was conducted on constitution & Democratic values. The Mentor divided students into different groups and given many group activities which has made the students active and energetic.



15. Automatic Weather Station

Institution has Installed an Automatic Weather Station (AWS) by ACARR Division of Cochin University of Science and technology to monitor weather parameters over Maliankara region of Ernakulam.

The Advanced Centre for Atmospheric Radar Research (ACARR) located in the main campus of Cochin University of Science and Technology (CUSAT) is funded by Ministry of Earth Sciences, Government of India. It was established in 2015 to undertake leading research in atmospheric science in the tropical monsoon area and to develop sophisticated observational and modeling capabilities in the troposphere and stratosphere for the accurate prediction of Indian monsoon system. It provides advanced techniques to monitor the Earth's atmosphere, including highly sophisticated radar, LIDAR, SODAR, GPS sonde, flux measurement systems, integrated sounding systems etc. These facilities allow researchers to get the detailed information and necessary data for their research programs and can incorporate in numerical weather prediction techniques.



Automatic Weather Station

Upon an MoU signed between CUSAT and S.N.M College, Maliankara on 3rd November 2021, the ACARR has installed an Automatic Weather Station (AWS) in the college campus for observing weather parameters over Maliankara region. The AWS thus installed is functioning effectively and is successfully providing real time weather information from these area. Head of the department of Botany is serving as the Nodal officer for this project.



16. Water Analysis Lab

Water analysis laboratory of Research Department of Botany is recognized by Kerala State Pollution Control Board for a period of two years. The estimating parameters are, water and waste water pH Temperature, Dissolved Oxygen, Turbidity Salinity Nitrate Nitrite Silicate, Phosphate, Chlorophyll a, microalgal identification, primary productivity *etc*.



Water Analysis Lab



17. Sree Narayana Study and Research Centre (SNSRC)

Sree Narayana Study and Research Centre an organisation working at SNM College, Maliankara, was started in 1996 with the objective of all-round growth of the students. Value-based seminars, various competitions and certificate courses have been conducted for the students from the year 2013 onwards. The objective of the certificate course is to spread the vision, life, and works of Narayana Guru to the students and society and thereby enabling social upliftment. It was started with broader view of benefits for the society by realizing the contemporary relevance of Narayana Gurudarshan.







The organisation stands for the purpose of bringing about social upliftment through students by including the common man in the field of knowledge. The Guru Mandapam, which became the face of SNM College, was established as a result of the hard work of Dr. Geetha Lakshmi, a prominent writer and a teacher in the Department of Malayalam, along with other members of the department.

Sree Narayana Study and Research Centre, SNM Yoga Club and Malayalam Section jointly organized a meditation workshop for the students. This meditation workshop aimed at the mental and physical development of the students was conducted at the College Seminar Hall. This workshop was conducted with the objectives of overcoming the mental and physical problems that have arisen in the students after the opening of the colleges, to make the students more mentally stronger and to make the study more interesting.













As part of Village Adoption programme with the objective of village upliftment through college students, SNSRC. College, taking one and two wards in the Vadakkekkara Panchayat, various activities are being carried out in that area. An introductory class and singing competition of Daivadasakam for the male and female members of adopted Village on April 26th from 10 am to 12 pm S.N.M. College Principal Dr. T.H. Jitha led introduction class of Daivadasakam. People of adopted village participated in this program. A large number of people participated in the singing competition of Daivadasakam.

SNSRC has conducted all activities for the academic year 2020-2021 on an online platform following the Covid pandemic. Operational Inauguration was conducted along with a series of webinars called SAMACHARAM. Webinar held from March 23 to March 26, The first day session was inauguration session - handled by Dr. Kuruvila Joseph Dean,Professor of ISST,Thiruvananthapuram, Second day session handled by Sri Asokan N.V., a teacher at Kutak Saiyanka School,Third day session handled by Sri. Sudhan Bhaskaran,VicePresident of Calcutta Sree Narayana Seva Sangham, Forth day session hanled by Research student of Tripunithura Government Sanskrit College. Mr. TR Sarath and other sessions in the webinar deal with various topics related to Gurudevdarshan. Gained knowledge of Guru Darshan and life, realize how guru darshan helps a common man for success in life.

The formal inauguration of activities for the academic year 2019-2020 was held on 26/09/2019 at 11 am. Inaugurated by Mr.Shaukat, Motivator, Philosopher and follower of Guru's vision. Topic of the speech was to influence Sree Narayana Guru's vision in daily life. Dr. T H Jitha addressed the presidential speech. Committee Members of Sree Narayana Research Center, Students teachers and non-teacher staff attended the programme.



18. MoUs & Collaborations:

The goal of the Memorandum of Understanding (MOU) is to have shared intentions to collaborate on training programs, projects, internships, outreach and extension programs, research & Innovations with established industries and institutions. Objectives of Memorandum of Understanding is to facilitates: Major and Minor Projects, Placements, Research and Development,

Industrial visits, Faculty exchange and visiting scholars, Skill development programs, Undergraduate and post-graduate student exchange. Institution has initiated MoUs and collaborations with research and academic bodies like **CIFT**, **KUFOS**, **CUSAT**, etc.