



The Berar General Education Society's
**Shri Radhakisan Laxminarayan Toshniwal
College of Science, Akola (M.S.)
(Shri R.L.T. College of Science)**



Recognized by Government of Maharashtra
Affiliated to SantGadge Baba Amravati University, Amravati
Re-accredited 'A' by NAAC, BangaloreWithCGPA-3.12



**4th Cycle of NAAC
ASSESSMENT AND ACCREDITATION**

**CRITERION III
RESEARCH, INNOVATIONS AND EXTENSION**

**Key Indicator - 3.2
Innovation Ecosystem**

3.2.1

**Institution has created an ecosystem for innovations and has
initiatives for creation and transfer of knowledge**



The Berar General Education Society's Akola
SHRI RADHAKISAN LAXMINARAYAN TOSHNIWAL COLLEGE OF SCIENCE

Civil Lines, Akola. 444001 (Maharashtra)

Affiliated to Sant Gadge Baba Amravati University, Amravati

Re-accredited by NAAC with "A" Grade with CGPA 3.12

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COLLEGE CODE: 210

Principal: Dr. Vijay D. Nanoty

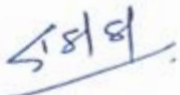
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Date: 11/10/2022

DECLARATION

This is to declare that, the information, data, true copies of the supporting documents etc. furnished in this file is checked and verified by IQAC, Shri R. L. T. College of Science, Akola and found to be correct.


Dr. R. L. Rahatgaonkar
IQAC Co-ordinator
Shri R.L.T. College of Science,
Akola


Principal
Shri R.L.T College of Science
Civil Lines, Akola (M.S.)



Index

Contents	Page No.
3.2.Innovation Ecosystem	
3.2.1 Institution has created an ecosystem for innovations and has initiatives for creation and transfer of knowledge	3
Patent certificate	4
AVISHKAR : Research Festival Reports	7
<i>InfoScience Magazine</i>	10
World Creative and Innovation Day 2021 magazine	15
BESST wall Magazine	18
Felicitation of Young Scientist	20
Innovation of B.Sc. Students Yash Shrikant Jayle	22
Certificate of Institution's Innovation Council	24

3.2. Innovation Ecosystem

3.2.1: Institution has created an ecosystem for innovations and has initiatives for creation and transfer of knowledge

- Shri RLT College of Science has created an ecosystem for innovation and has initiative for creation and transfer of knowledge through various activities.
- During 2017-18 to 2021-22 college conducted innovations activity, socio-economic related work and creative activities.
- College conducts soft skill development programs, scientific temperament activities, National and State level seminar, workshops, guest lecture and social awareness projects
- Departments of College have their students cells like ZEBRA cell of Zoology Departments , MICRAN club of Microbiology Department, HOLY BASIL club of Botany Department, CRYSTAL club of Chemistry Department, Bio Info club of Bioinformatics Department and Sky Observation Club of Physics Department, through this club department has created an ecosystem for innovations and take initiatives for creation and transfer of knowledge by conducting guest lecture, seminar competition, aptitude test and science exhibitions.
- During 2017-18 to 2021-22 faculty published 234 research paper in referred, reputed journals and published 25 books and articles
- Two faculties Dr PT Agrawal and Mr S Jaiswal are awarded by patents and remains to file patents
- NSS, NCC and Environment cell conducts Tree plantation, blood donation, road safety rally and health awareness camps, swachhtaabhiyan and youth awareness programs.
- COVID vaccination camps, Sanitizer and mask distribution programs conducted by NSS units of college.
- Total 8 students are selected for State level AVISHKAR competition and represent University Team during the year 2017-18 to 2019-20.
- **InfoScience** magazine were published by college every year where students and Teachers published their articles which helps to develop scientific temperament in students and transfer of knowledge.
- **BESST** wall magazine started by college were students displayed scientific articles and assigned projects.
- College has 6 Research center (Botany, Chemistry, Mathematics, Microbiology, Zoology and Physical Education) and P.G. In 8 Subject (Granted-Mathematics and Non-granted Chemistry, Botany, Biochemistry, Computer Science, Microbiology, Physics and Zoology).
- Felicitate the students of Akola district who got selected for the State level competition of science Project in National Children Science congress
- Our Students Yash Jayale innovate water bike and applied for patent.
- Establishment of Institution's Innovation Council for promoting students innovations

I. Patent Certificate:

1. Dr. Poonam Agrawal (P.G. Department of Chemistry, Shri RLT College of Science, Akola)

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202021055025 A
(19) INDIA	
(22) Date of filing of Application :17/12/2020	(43) Publication Date : 26/02/2021
(54) Title of the invention : AN ALCOHOL FREE HAND SANITIZER COMPOSITION	
(51) International classification	:A61Q0017000000, A61Q0019100000, A61K0008970000, A61L0002000000, A61K0008460000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	:NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
(71)Name of Applicant :	1)AGRAWAL POONAM T. Address of Applicant :P.G. DEPARTMENT OF CHEMISTRY, SHRI R.L.T. COLLEGE OF SCIENCE, AKOLA-444001 (M.S.) Maharashtra India
(72)Name of Inventor :	2)CHOUBE RONIT VIJAYANAND 1)AGRAWAL POONAM T. 2)CHOUBE RONIT VIJAYANAND
(57) Abstract :	

2. Mr. Shailesh R. Jaiswal (PG Department of Physics, Shri RLT College of Science, Akola)



Extracts from the Patents Act, 1990

- Sec 120(1A)** Infringement proceedings in respect of an innovation patent cannot be started unless the patent has been certified.
- Sec 128** **Application for relief from unjustified threats**
- (1) Where a person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings a person aggrieved may apply to a prescribed court, or to another court having jurisdiction to hear and determine the application, for:
- (a) a declaration that the threats are unjustifiable; and
- (b) an injunction against the continuance of the threats; and
- (c) the recovery of any damages sustained by the applicant as a result of the threats.
- (2) Subsection (1) applies whether or not the person who made the threats is entitled to, or interested in, the patent or a patent application.
- Sec 129A** **Threats related to an innovation patent application or innovation patent and courts power to grant relief.**
- Certain threats of infringement proceedings are always unjustifiable.*
- (1) If:
- (a) a person:
- (i) has applied for an innovation patent, but the application has not been determined; or
- (ii) has an innovation patent that has not been certified; and
- (b) the person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings in respect of the patent applied for, or the patent, as the case may be; then, for the purposes of an application for relief under section 128 by the person threatened, the threats are unjustifiable.
- Courts power to grant relief in respect of threats made by the applicant for an innovation patent or the patentee of an uncertified innovation patent*
- (2) If an application under section 128 for relief relates to threats made in respect of an innovation patent that has not been certified or an application for an innovation patent, the court may grant the applicant the relief applied for.
- Courts power to grant relief in respect of threats made by the patentee of certified innovation patent*
- (3) If an application under section 128 for relief relates to threats made in respect of a certified innovation patent, the court may grant the applicant the relief applied for unless the respondent satisfies the court that the acts about which the threats were made infringed, or would infringe, a claim that is not shown by the applicant to be invalid.
- Schedule 1** **Dictionary**
- certified**, in respect of an innovation patent other than in section 19, means a certificate of examination issued by the Commissioner under paragraph 101E(e) in respect of the patent

II. AVISHKAR: Research Festival

His Excellency, the then Governor of Maharashtra, Shri. S.M. Krishna has initiated a novel inter university research project competition named 'AVISHKAR' in the year 2006. This activity, unique in its nature and Savitribai Phule Pune University has taken special efforts to increase the participation of the talented students from rural and urban areas.

His Excellency, the then Governor of Maharashtra, Shri. S.M. Krishna has initiated a novel inter university research project competition named 'AVISHKAR' in the year 2006.

This activity, unique in its nature and Sant Gadge Baba Amravati University, Amravati has taken special efforts to increase the participation of the talented students from rural and urban areas.

Guidelines of the participants:

Projects can be in the form of live demonstration /models / posters and should be based on innovative ideas, in given six categories.

- I. Humanities, Languages, FineArts, etc.
- II. Commerce, Management, Law
- III. Pure Sciences
- IV. Agriculture andAnimal Husbandry
- V. Engineering & Technology
- VI. Medicine and Pharmacy

Each college/institution can send separate entries for four levels of:

UG Level

PG level

Post PG level (M. Phil /PhD)

Teacher level

Aims and Objectives of AVISHKAR:

To inculcate research culture among students.

To encourage original and novel thinking.

To provide an opportunity for expression of academic talent.

To promote interaction among academia, R & D Institutes and Industries

Achievements of Students In AVISHKAR

COLOUR COAT HOLDERS OF AVISHKAR 2017-18



Priya Wankhade (B.Sc. III), Kanchan Mangatani (M.Sc. II), Insiyah D. Vora (M.Sc. II) & Varsha D. Yennewar (M.Sc. II)

Selected for State Level Avishkar Competition 2017-18 from S.G.B. Amravati University, Amravati

COLOUR COAT HOLDERS OF AVISHKAR 2018-19



Ms. Vasundhra Dutonde (B.Sc. III) & Ms. Kanchan Mangtani (M.Sc. II)
Selected for State Level Avishkar Competition 2018-19 from S.G.B. Amravati University, Amravati

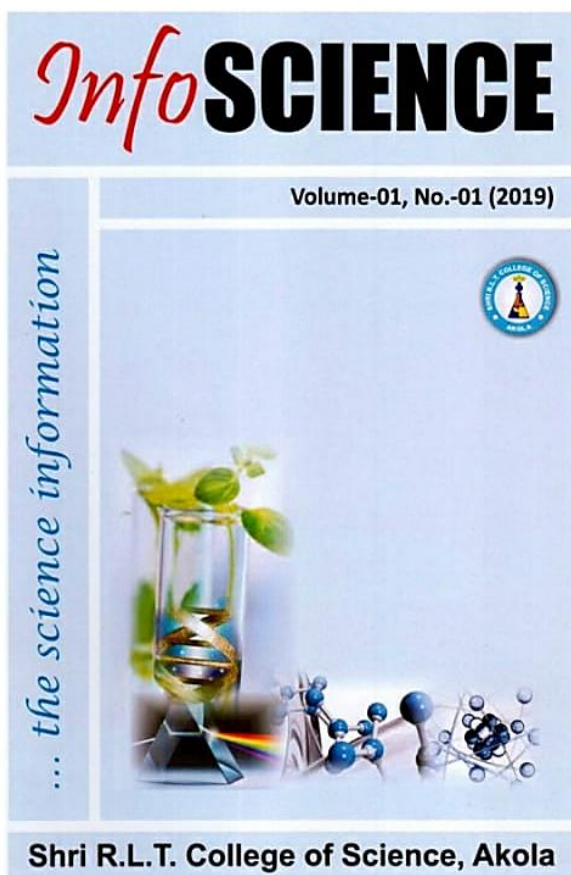
COLOUR COAT HOLDERS OF AVISHKAR 2019-20



Mr. Anuraj Chauhan (B.Sc. III) & Ms. Shraddha Akhare (M.Sc. II) Selected for State Level Avishkar Competition 2019-20 from S.G.B. Amravati University, Amravati

III. *Info*SCIENCE Magazine

The first volume of *Info*SCIENCE was published in 2019-20. The aim of publication was to provide the common platform to researchers, teachers and students to share their innovative scientific ideas and research plan in the field of science and technology. This issue is enriched with various scientific and research articles of varied ideas and diverse views. These articles will definitely help the readers and contributors to update their scientific knowledge.



*Info*SCIENCE

Message from the Principal's desk ...



It's our great pleasure and pride to publish the 1st volume of science magazine... *info*SCIENCE, incorporated with scientific and research articles that are influential in the field of science and technology with substantially advance scientific understanding. I congratulate the entire team of *info*SCIENCE for their hardwork and dedication that has resulted in the publication of this issue. I hope these determined efforts of ours, will go a long way.

At Shri R.L.T. College of Science, Akola much has been done in last five decades and still more needs to be done in years to come. I am sure that *info*SCIENCE will amply support institution's contribution in the field of science and technology.

Dr. Vijay D. Nanoty
Principal
Shri R.L.T. College of Science, Akola

Editor's pen writes ...



We are really proud and exuberant to acclaim the publication of science magazine... *info*SCIENCE. It's indeed a great pleasure to publish the 1st volume of *info*SCIENCE which is enriched with various scientific and research articles on different aspects and concepts of science and technology.

The goal of the coverage of *info*SCIENCE is to help readers and contributors make sense of the world of science and technology and to help them assess the position of science and technology in the context of society. Focus of the *info*SCIENCE is to publish scientific and research articles, reviews with matter of interest to students, researchers and other who concerned with the wide implications of science and technology.



We cordially thank our patrons, honorable executive members of the Berar General Education Society, Akola and advisors for providing kind support and being inspiration to this scientific project. We take this opportunity to thank all the contributors as their contribution will be the reason that makes the *info*SCIENCE endearing with all our readers. We would like to congratulate the participants of Student Research Convention - AVISHKAR for their contribution in bringing this herculean task to this shape.

It is fine thing to have ability but the ability to discover ability in others is the true test. We are really thankful to Principal Dr. Vijay D. Nanoty for entrusting us with responsibility of editing *info*SCIENCE. We are thankful to all our students and colleagues who dipped their oars into the turbulent water of *info*SCIENCE and have sailed it to the shore of publication with their sincere support.

Dr. Sushil M. Nagrale, Dr. Pradip P. Deohate and Dr. (Mrs.) Anjali A. Sangole
Editors, *Info*SCIENCE

InfoSCIENCE

Volume-01, No.-01 (2019)

InfoSCIENCE, Volume-01, No.-01, 2019

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The Berar General Education Society's
NAAC Reaccredited 'A' Grade with CGPA 3.12



Shri R.L.T. College of Science, Akola

Contents

Research Articles

1. Relative Study of Biodiesel Preparation from Virgin and Waste Vegetable Oils Ms. Vasundhara N. Dutonde and Dr. Pradip P. Deohate	01
2. A Study of Solid Waste Management Ms. Kanchan N. Mangtani and Dr. Harish S. Malpani	04
3. Ginger Oil - The Herbal Solution Ms. Apurva R. Shah and Dr. Poonam T. Agrawal	08
4. Effect of Spraying Fermented Extract <i>Amaranthus spinosus</i> on Growth of Green Gram (<i>Vigna radiata</i>) - Pot Study Ms. Krashna R. Laddha and Prof. Sonali N. Gawande	10
5. Dust Settler - An Economic Homemade Instrument, A Noble Approach to Reduce the Rate of Pollution Level in the Atmosphere Ms. Yoshita K. Veera and Prof. Shailesh R. Jaiswal	13
6. Assessment of Ground Water Quality of Some Villages in Akola District for Irrigation Purpose Mr. Balraj B. Khurania and Dr. Pradip P. Deohate	15
7. Production of Handmade Paper from Cotton Rags Mr. Akhilesh A. Puranik, Dr. Sudhir R. Kohchale and Dr. Sushil M. Nagrale	18
8. Microcontroller Based TechEye System for Obstacle Detection and Ranging to Assist Blind Person Mr. Yash D. Vidyasagar and Prof. Ram G. Chavan	20
9. Arduino UNO Based Accident Avoiding System in Mountainous Area Across U-Turn Prof. Dattaraj S. Vidyasagar and Prof. Rajesh D. Chaudhari	21

Scientific Articles

10. Proficiency Test of OPCW and Role of Chemical Weapons Convention in the World of Humanity Prof. Vinod D. Deotale	23
11. Significance of Pollen Study Dr. Anjali A. Sangole	27
12. Insect World - Diversity of Insects Thrips Dr. Sushil M. Nagrale	29
13. Microwave Synthesis - A Potential Tool for Green Chemistry Dr. Ashish G. Sarap	32
14. <i>Acacia Arabica</i> (Lamk.), Rarely Used Medicinal Plant Against Various Diseases Dr. Pramod M. Khadse	35
15. Light Pollution - Effects on Health Dr. Rajendra L. Rahatgaonkar	38
16. Cyber Security Prof. Ram B. Ghayalkar	40
17. Nano-Spike Catalysts Dr. Kavita M. Heda	44
18. The Mysterious Fruit - <i>Hylocereus undatus</i> (Dragon fruit) Prof. Vaishali N. Badgujar	46

InfoSCIENCE

Volume-02, No.-01 (2020)

... the science information



COVID-19 / Novel Corona Virus *Be Safe... Be Careful... Stay at Home*



Shri R.L.T. College of Science, Akola

InfoSCIENCE, Volume-02, No.-01, 2020

Contents

Research Articles

1. Fabrication of Nano Structured Based Zinc Oxide (ZnO) Sensor for Humidity Sensing Application
Mr. Anuraj G. Chauhan and Dr. Rohitkumar M. Agrawal 01
2. Cremation and its Hazardous Impact on the Environment
Mr. Balraj B. Khurania and Prof. Shailesh R. Jaiswal 06
3. Analysis of Ground Water Quality of Some Villages in Akola District and its Suitability for Irrigation of Agriculture Land
Ankita R. Bagade, Kanchan S. Somwanshi and Dr. Pradip P. Deohate 09
4. A Study on Antimicrobial Potential of *Tridax procumbens*
Mr. Atul R. Seth and Dr. Harish S. Malpani 13
5. Antagonistic Bacteria - A Perfect Amalgam of Bio-control Agent and Pesticide
Mr. Vishvajitsing S. Daberao and Dr. Harish S. Malpani 15
6. Measuring the Diameter of Human Hair with Laser
Ms. Diksha A. Golt, Ms. Fatema A. Shaikh, Mr. Aditya S. Gawande and Prof. Shailesh R. Jaiswal 18

Scientific Articles

7. COVID-19, Novel Corona Virus
Dr. Pradip P. Deohate 20
8. Lichens - The Natural Bio-Indicator of Air Pollution
Dr. Pramod M. Khadse 22
9. Silk Milk - A Value Addition to Sericulture
Dr. Rashmi P. Joshi (Sawalkar) 25
10. Insect World - The Social Insect Ant
Dr. Sushil M. Nagrale 28
11. The Future of Nanotechnology in Medicine
Prof. Shankesh C. Zyate 33
12. Cardio-Pulmonary Resuscitation (CPR)
Dr. Sudhir R. Kohchale 35
13. Worldwide COVID-19
Ms. Shradha B. Sable 37
14. Handmade Hand Sanitizer
Ms. Shrutika V. Kadam 39
15. Amblyopia Due to Mobile Addition - A Threat to Society
Ms. Arti G. Kadu 41

InfoSCIENCE

Volume-03, No.-01 (2021)

... the science information



Shri R.L.T. College of Science, Akola

InfoSCIENCE, Volume-03, No.-01, 2021

Contents

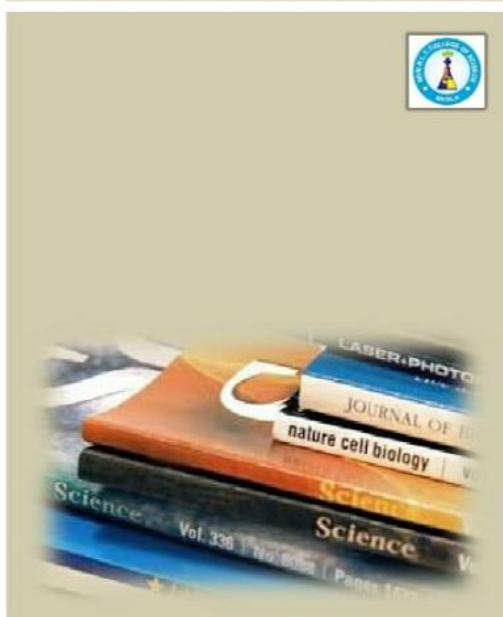
Research / Scientific Articles

1. Recycling of Sericultural - Pupae Waste Dr. Rashmi P. Joshi (Sawalkar)	01
2. Introduction and Importance of Medicinal Plants and Herbs Dr. Anjali A. Sangole	03
3. Nanoplastics - Blood-Brain Barrier, Threatens to Human Health Dr. Poonam T. Agrawal	05
4. Processed Food and Health Dr. Vinod D. Deotale	07
5. Insect World - Diversity of Wasp Dr. Sushil M. Nagrale	09
6. Chemical Weapons - The Toxic Chemical Compounds Dr. Pradip P. Deohate	11
7. Plants Use as Ethno Medicine Ms. Shiwani G. Gangamwar	14
8. Biodiesel - Eco-Friendly, Biodegradable and Renewable Biofuel Ms. Juvairiya Sadiya Nasir Khan	16
9. Transgenic Bt Cotton Ms. Laxmi S. Mhasaye	20
10. Higgs Boson - Really a God Particle? Ms. Varada V. Bhusari	22
11. Li-Fi - The Future of Data Transfer Mr. Rohit S. Wadkar	24
12. What is Bone Marrow? How it Saves Life? Ms. Samiksha S. Dongare	26
13. Mathematical Model for Covid-19 Epidemic Ms. Rohini M. Wankhade	30
14. Metabolism Ms. Disha A. Shah	32
15. The New Fish Hiranyakeshi - Jewellery in the Mountains of Sahyadri (Western Ghats) of Maharashtra Ms. Dnyaneshwari N. Polkat	34
16. Reuse of Cooking Oil - Not a Healthy Choice Ms. Prachi D. Dalu	36
17. Forget 98.6°F, Humans are Cooling Off - It's Time to Redefine Normal Body Temperature Mr. Nikhil V. Sharma	38

InfoSCIENCE

Volume-04, No.-01 (2022)

... the science information



Shri R.L.T. College of Science, Akola

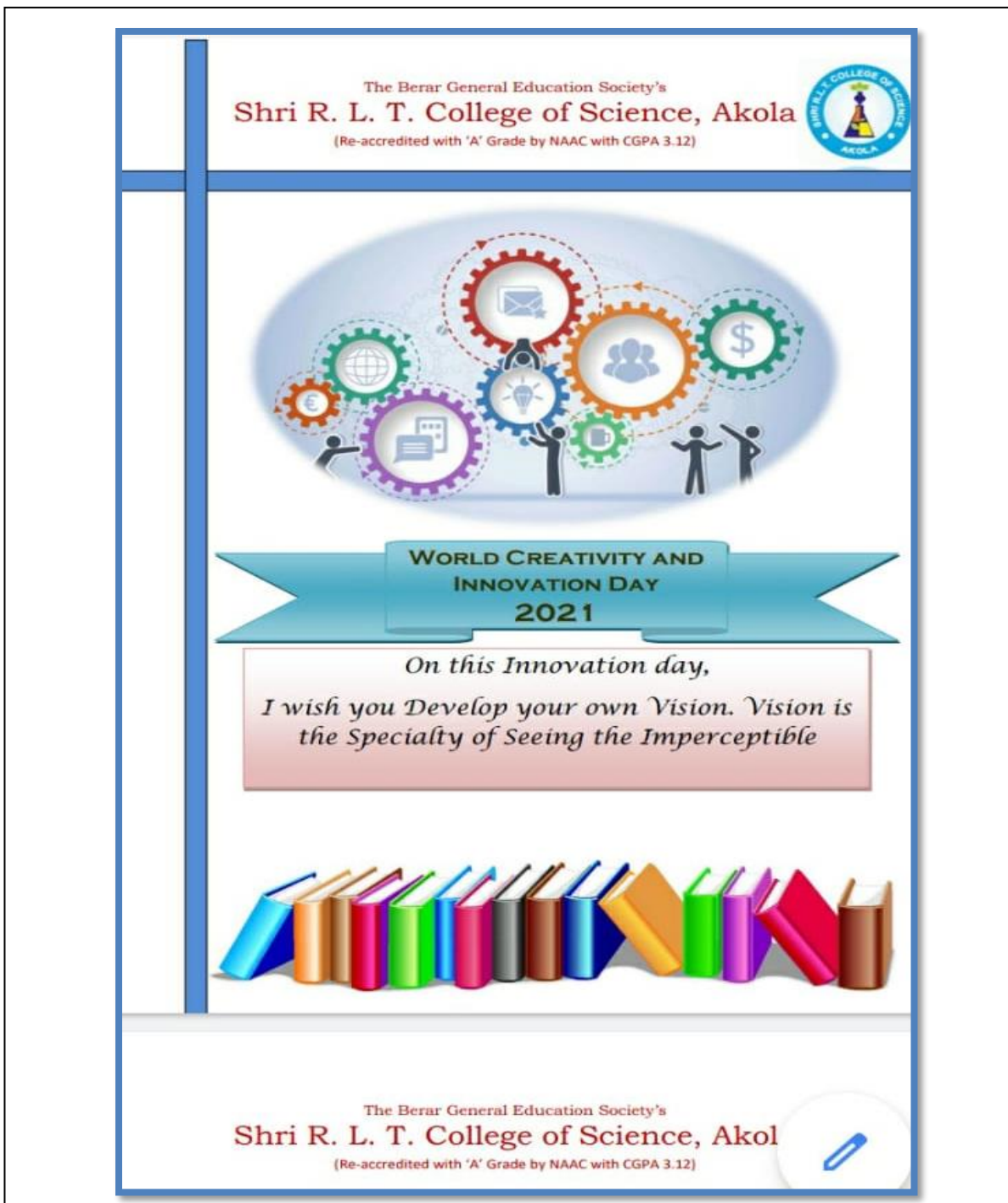
Contents

Research / Scientific Articles

1. Insect World - Diversity of Ichneumon Wasp Dr. Sushil M. Nagrale	01
2. Honey and Health Prof. Sonali N. Gawande and Mr. Pawan D. Dharmode	04
3. Chemical Science of Revolutionary Scientist - Acharya P. C. Ray Dr. Vinod D. Deotale	08
4. Review on the Development of Quantum Cutting Phosphors for Mercury-Free Fluorescent Lamps (MFFL) Prof. Shailesh R. Jaiswal	12
5. Cotton Pollen Grain Morphology Dr. Anjali A. Sangole	16
6. Interesting Discoveries in Chemistry Dr. Pradip P. Deohate	18
7. Mobile Radiation and Human Health Dr. Kavita M. Heda	21
8. Utilization of Sericulture Waste for Improvement of Socio-Economic Welfare in India Dr. Rashmi P. Joshi (Sawalkar)	24
9. The Internet of Things ... IoT Ms. Aishwarya G. Pathak	28
10. Nuclear Power - The Key to Least-Cost Zero Carbon Emissions Ms. Aakanksha S. Dongare	30
11. Black Wheat - A Better Food Supplement Ms. Laxmi S. Mhasaye	32
12. Recycling of Chemistry Laboratory Waste Water - Today's Need Mr. Ronit V. Choube	34
13. Easier and Efficient Selective Oxidation of Carbon-Hydrogen Bonds Using Oxygen with Reusable Catalyst Ms. Samiksha S. Dongare	36
14. Developments in the Field of Biotechnology Ms. Sakshi R. Mishra	38
15. Recycling of Plastic Ms. Vaishnavi S. Aglave	40
16. A Cognitive Map - Navigation of Bats Using Spatial Cognition Ms. Anushka D. Gawande	43
17. Environmental Effects of Pesticides Ms. Priya C. Khobare	46
18. Turmeric - Nature's Precious Gift Ms. Pooja G. Gawande	48
19. Parsley - A Beautiful Herb with Unique Medicinal Values Ms. Samiksha A. Phuse	50

IV. World Creative and Innovation Day

On the occasion of World Creative and Innovation Day 2021 college published magazine of PG Chemistry Students Projects. Total 20 innovative and creative project were published in the magazine.



The Berar General Education Society's
Shri R. L. T. College of Science, Akola
(Re-accredited with 'A' Grade by NAAC with CGPA 3.12)



**WORLD CREATIVITY AND
INNOVATION DAY
2021**

Edited by

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CRITERION III: RESEARCH, INNOVATIONS AND EXTENSION

Content:-

Sr. No	Name of Student	Topic	Page NO.
1.	Ms. Ankita P Jaiswal	How To Make Incense Stick At A Home	1
2.	Ms. Ankita B. Potdukhe	To Determine Which Tea Is More Healthful	2
3.	Ms. Archana S. Paraskar	Paper From Elephant Poop	3
4.	Ms. Shrutika Vijayrao Kadam	BOOK FOUNDER IN LIBRARY	4
5	Ms. Suhani S. Sharma	Homemade Simple Water Filter	5
6.	Ms. Komal Suresh Ingle	To Measure the Pollution Level in Your Locality	6
7.	Ms. Komal Vinayak Karale.	Innovating Idea Regarding Housework	7
8	Ms. Komal Bhikamchand Sewak	Home DNA Extraction	8
9	Ms. Nikita M. Wankhade	Free Energy Generation Using Blades (Razor)	9
10	Ms. Pratiksha H. Mhatre.	How To Make Indicator Strips At Home	10
11	Ms. Priyanka Ashok Kahar.	Prevention of Accident From Drowsiness	11
12.	Ms Trupti Ganesh Bhise	How To Make Earthquake Alarm	12
13	Ms. Komal Shankar Langote	Home made Neem soap	13

14	MS. Shruti A. Panchbhai	Mosquito Repellent Candle	14
15	Ms. Ashwini Sunil Fate	Personal Hygiene Care Tips	15
16.	Mr. Dhiraj Prakash Agrawal	Ayurvedic Immunity Booster Kadha	16
17.	Ms. Harsha S. Gwalani	Homemade Sunscreen Cream Cum Moisturizer	17
18.	Mr. Sanjivani Surendra Chaudhari	Social Distancing Smart Dvice For Covid-19	18
19.	Ms. Vaishnavi G Honale	Biodiesel Is An Alternative Fuel	19
20.	Ms. Rajnandini S. Ingle	Ayurvedic Medicine For Fallopian Tube Blockage	20

V. Wall Magazine BESST (Biological and Environmental Studies with Social Temperament)

The Wall Magazine BESST (Biological and Environmental Studies with Social Temperament) is an innovative participatory learning project for B.Sc. Biology students. It is a launch pad for the student's creative urges to blossom naturally. As the saying goes, mind like parachute works best when opened. This humble initiative set the budding minds free allowing them to roam free in the realm of experience to create a living world in words. Our student authors have put across some amazing pieces of writing in this Wall Magazine.

Dr. Archana S. Sawarkar worked as Chief Editor and Dr. Sudhir R. Kohchale, Dr. Rashmi Joshi (Sawalkar), Mr. Shailendra V. Madavi worked as Area Editors for Animal Science, Environmental Science and Plant Science respectively.

The first issue of Wall Magazine BESST was release on 11th August 2018 with the hands of Principal Dr. V. D. Nanoty in presence of IQAC Coordinator Dr. R.L. Rahatgaonkar and Dr. S.M. Nagrale, Head Department of Zoology.



CRITERION III: RESEARCH, INNOVATIONS AND EXTENSION



VI. Felicitation of Young Scientists

Crystal Club premier club of Department of Chemistry of Shri R.L.T. College of Science, Akola is always ahead of various research activities. It always takes a lead for various innovative ideas and concept in the field of scientific research. This time also crystal club took this opportunity to felicitate the students of Akola district who got selected for the State level competition of science Project in National Children Science congress. To create awareness, interest and to motivate the students the department of chemistry took this initiation and felicitated the young Scientists.

Three groups of students got selected from Akola district for National children Science congress. These students are from Prabhat Kids School of Akola. The name of the students is Anvi Jaybhave, Aayush Raut, Aarya Pande and group.

There felicitation and guidance programmewas organized by Shri R.L.T. College of Science Akola in collaboration with Shrushti Vaibhavon 4thJanuary 2022.These children were awarded by memento and certificate at the hands of Principal Dr. V.D. Nanoty sir and Shri Uday Vaze founder member of Shrushti Vaibhav. Dr. Poonam Agrawal. Head department of Chemistry organizer of this event, Dr. Kavita Head and Dr. Aashish Sarap faculty of chemistry department were present for this programme.

This programme was conducted in the gracious presence of the principal and teachers of various school of Akola district. Students of various schools and students of M.Sc. Chemistry were present for this programme.

At this occasion the selected students have given their presentation of research topic and the teachers form shri R.L.T. College of Science Dr. Archana Savarkar, Dr, Rashmi Joshi. Dr. Poonam Agrawal, Shri R.D. Choudhary, Dr. Nisha Warale guided them for the higher-level competition.

The motto behind this organization is to nurture the culture of research among the young minds, to support the scientific temperament and to generate innovative spirit among the school and college students. Principal DR. V,D, Nanoty sir congratulated the students ,teachers and parents for this grand success,

CRITERION III: RESEARCH, INNOVATIONS AND EXTENSION



Innovation of B.Sc. Students: Water Bike (Incubation Center: Activity)

Mr. Yash Shrikant Jayle, B.Sc. final year student of our college innovate a bike which can run on salt water. By electrolysis process on salt water he separated Hydrogen gas and used it for combustion to run bike engine. A specific mechanism was used for this process. His father Dr. Shrikant Jayle promoted him to continue his work on water bike engine. Principal Dr. V. D. Nanoty, congratulate him for this innovation and support financial aid. He explains the average speed of this bike is 40 km/hr and range of 120 km by costing of Rs 30/- salt water only. He along with his team Mr. Abhijit Dharme, Mr. Shantanu Jakde, Mr. Mandar Kalle and Mr. Mahesh Ghate applied for patent for this innovation.



Jash Jayle explain about Water bike to Hon'ble Minister Mr. Nitin Gadkari



मातृभूमि

अकोला सिटी

बाजोरीया ग्रुप

अकोला, रविवार दि. २४ जानेवारी २०२१

संशोधन

मातृभूमि वृत्तसेवा
। अकोला, दि. २३।

अकोल्यात प्रथम आरएलटी म हाविद्यालयाचा विद्यार्थी वर कोकिल जाणले या विद्यार्थ्यांच्या संकल्पनेतून व अभियंता धने, शंभु शंकरे, मंगल कडवे व मंगल घटे यांच्या सहकार्याने वॉटर बाईक तयार करून एक नवा इतिहास घडविला. स्थान शासनातील इन्सुलेशनरीम या सिद्धांताचा वारस करून खाऱ्या पाण्याचे रेकटाइन प्लास्टिक मॉडेलचे हयड्रोजन टांका हे तयार केले होते। त्याच लक्षात गाडीमध्ये वापर करून गाडी प्रती ताप ४० कि.मी. वेगाने धावून ती वाकते धावते। शरदुत पती आसस्यक आत्म्याचे वर जायले

प्राचार्य विजय नानोटीकडून कौतुक

आत्मच्या महाविद्यालयाचा विद्यार्थी वर जाणले या विद्यार्थ्यांच्या संकल्पनेतून पाण्यावर चालणारी वॉटर बाईक खरोखरच देशांतरिता एक नवा इतिहास रचले यात दिव्यमात्र शंका नाही. वर व त्यांच्या मित्र मंडळींचे कर्तव्य दिलेले कौतुक खरोखरच वाखाण्यार्जने आहे. त्यांच्या या यशानुळे आत्मच्या महाविद्यालयाचे चावही निरचीत देशाच्या कानकोप्यात पोहोचले.

संवत्पावर उभी करून ठेवायचा. वॉडिंगनी त्याला म्दरले की, फॅटल महंग आहे, गाडीला हल नसे ताकत जाय, एवक्याच निमित्ताने त्याला प्रेरणा मिळाली. अशी गाडी वर पाण्यावर चालतील तर किती म जा येत असा विचार करून त्याने आपल्या मित्र मंडळींला सोबत घेऊन स्थाने वेगवेगळे प्रयोग सुरू केले. प्रथमी स्थान मंगर बाजारामून एन एटीचे गाडीचे काही स्पेअर पार्ट विकत

अकोले, ताकत पाण्याचा टांकाचा प्रयोगाम सुरूवात केली. इच्छुद प्रयोग यशस्वी होत लागला व त्याचा उपसाह वाढत गेला. वॉडिंगच्या नकोतुन हा प्रकस सुरुवात नाही. स्थानी स्थाने हो मागेत त्या गाडीकरीता लागण्याचा यत्न त्याला देण्यास सुरुवात केली व यश आणत यशस्वी झाला. स्थाने स्थाने वेगवेगळी मागणीचे वेळी आते ती तीही शेवटच्या टप्प्यात आहे.

सांगितले. असेच पाण्याची वाक मायलेसर मधून वातावरणात सोडली जाते. फक्त ३० रुपायत ही वॉटर बाईक १२० कि.मी. धावू शकते त्याच्या प्रयोगामुळे अकरेपान्या इतिहासात आणखी एक मानाचा तुप

निरचीतच खोवला जाणार आहे. स्थानिक कोरलनेद घोरमरात राहणारे डॉ. कोकिल जाणले व सी. दुमूर जाणले यांचा भूला यश हा आपल्या वॉडिंगची नेहमीच चालवीत होता. मंगर मायकात्म्यदील एटील

संवत्पावर उभी करून ठेवायचा. वॉडिंगनी त्याला म्दरले की, फॅटल महंग आहे, गाडीला हल नसे ताकत जाय, एवक्याच निमित्ताने त्याला प्रेरणा मिळाली. अशी गाडी वर पाण्यावर चालतील तर किती म जा येत असा विचार करून त्याने आपल्या मित्र मंडळींला सोबत घेऊन स्थाने वेगवेगळे प्रयोग सुरू केले. प्रथमी स्थान मंगर बाजारामून एन एटीचे गाडीचे काही स्पेअर पार्ट विकत

Certificate of establishment of an Institution's Innovation Council in the campus



Kalanoti
Principal
Shri R.L.T. College of Science
Civil Lines, AKOLA (M.S.)



Institution's Innovation Council (IIC):

The Ministry of Education (MoE) through MoE's Innovation Cell (MIC) launched the Institution's Innovation Council (IIC) program in collaboration with AICTE for Higher Educational Institutions (HEIs) in 2018 to systematically foster the culture of innovation and start-up ecosystem in Higher education institutions.

So far a network of more than 2900 IIC institutions has been established. Primarily, IICs' role is to engage a large number of faculty, students, and staff in various innovation and entrepreneurship-related activities such as ideation, Problem-solving, Proof of Concept development, Design Thinking, IPR, project handling and management at Pre-incubation/Incubation stage, etc., so that innovation and entrepreneurship ecosystem gets established and stabilized in HEIs.

The IIC model is designed to address the existing challenges/issues in HEIs such as fewer numbers, occasional and unplanned Innovation & Entrepreneurship (I&E) activities with low involvement of top leadership, lack of coherence, and absence of synergy in resource mobilization, deployment, and underutilization of the creative potential of youths as a major barrier for vibrant I&E ecosystem to emerge from HEIs. IIC model is unique and distinct as it integrates the functionalities of flexible calendar activities, scoring and reward system, decentralizing operation with the division of work, progress monitoring, and incentive mechanisms in a coordinated manner through a robust digital platform.

In the last three years, IIC has emerged as a very sustainable and scalable model for promoting innovation within HEIs and the efforts of these IIC Institutes can be seen as an impactful contribution towards making the country's innovation and start-ups ecosystem more vibrant and dynamic. The recent achievement of India's 46th position in the Global Innovation Index (GII) ranking 2021 is a reflection of the same. You may refer to the best performing IIC institutes announced under the IIC 2.0 (2019-20) and IIC3.0 (2020-21) IIC annual performance rating at https://iic.mic.gov.in/iic_rating_2019_20 & <https://iic.mic.gov.in/iic-ratings2021>

The achievement and impact created by these IIC institutions and at national level can be seen at <https://iic.mic.gov.in/iic-impact-dashboard>

Currently, the registration of HEIs for IIC4.0 (AY 2021-22) is going on. HEIs have not established IICs are also invited to become part of the network. In this regard, we are inviting your institution to establish an IIC. To initiate this, the Head of the Institute (HoI) has to register and submit the application. The soon you will submit, we will evaluate and approve the establishment of IIC accordingly and it will help you to start conducting the IIC activities for the AY 2021-22.

You can visit the website for more information at <https://iic.mic.gov.in>

You can sign up for new registration for the establishment of IIC at <https://iic.mic.gov.in/signup>

For any query please contact zonal coordinator of your zone <https://iic.mic.gov.in/iic-implementation-team>

We will wait to see you and welcome you to join the largest and ever-growing network of IIC institutions.

Thank you, regards.

Dipan Sahu

Asst. Innovation Director

Ministry of Education's Innovation Cell

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