

**Karnataka Science and  
Technology Academy**  
Department of Science and Technology  
Government of Karnataka

# Annual Report 2021-'22

**Karnataka Science and Technology**

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# Karnataka Science and Technology Academy

Department of Science and Technology

Government of Karnataka

Karnataka Science and Technology Academy, a Unit of the Department of Science & Technology, Government of Karnataka, has been functioning since 2005, with the objectives of inculcating scientific temper across civil society through science communication, technology dissemination, fostering innovations and entrepreneurship for societal benefits, recognising talents and organising outreach programmes, capacity building and acting as STI Policy Advisory Body for the State.

It was established in 2005 under the Chairmanship of Late Padma Vibhushana Prof. U.R. Rao, a renowned Space Scientist and Former Chairman, Indian Space Research Organization (ISRO) / Secretary, DOS, Govt. of India on July 30, 2005 vide GO No. ವಿಯಇ ವಿತ್ರಮ 2005.

Presently, Padma Shri Prof. S Ayyappan, Chancellor, Central Agricultural University, Imphal and Former Director General, ICAR/ Secretary, Department of Agricultural Research and Education, GOI is the Chairman. KSTA has 15 members, including special invitees, comprising of renowned educationists, distinguished scientists and senior administrators.

Majour programs conducted during 2021-22 are as follows:

## 1. Webinar, Hybrid and Physical Programs

During FY 2021-22, 49 programs related to frontier areas of science and technology were conducted through Video Conference (VC) and Physical mode in association with research institutes/ science forum/ educational organizations. About 10300 participants benefited by these programs.

### Webinar

Sl. No	Date	Program Title	Associate Institution/ Organisation	Beneficiaries (No.)
1	27 April 2021	Monthly Science Lecture Series - 09 - PATH OF SCIENCE by Dr. Palahalli Vishwanath	ICAR, NaaViC and NIVEDI	34
2	30 April 2021	Basics of IPR by Shri Vivekananda Sagar	ICAR, NaaViC and NIVEDI	244
3	07 May 2021	IP Filing in India by Dr. Sarasija Padmnabhan	ICAR, NaaViC and NIVEDI	240

Sl. No	Date	Program Title	Associate Institution/ Organisation	Beneficiaries (No.)
4	13 May 2021	Searching in Databases of Patents by Dr. Sarasija Padmnabhan	-	289
5	06 May 2021	COVID-19 and Mental Health: The Hidden Pandemic, by Dr. Muralidhar Keshavan	-	87
6	12 may 2021	Bharata Swatantra Amruta Mahotsava (BSAM) Lecture Series: Beliefs and Mental Health by Dr. C R Chandrashekar	-	87
7	19 May 2021	Bharata Swatantra Amruta Mahotsava (BSAM) Lecture Series: Pitfalls and Prospects in Science Communication by Shri Nagesh Hegde	-	64
8	20 May 2021	COVID-19: Lesson for Science and Society	-	58
9	21 may 2021	Empowering Youth in Agripreneurship	-	1054
10	25 May 2021	Indigenous Anti-diabetic Plants in North Karnataka in the Perspective of COVID-19	ICAR, NaaViC and NIVEDI	59
11	28 May 2021	Dairy Processing and Value Addition: Entrepreneurial Opportunities and Strategies	Gravity Science Foundation	866
12	31 May 2021	Monthly Science Lecture Series -10 :COVID-19 From First Wave to Second Wave and Beyond, by Dr. N Prabhudeva	-	44
13	02 June 2021	Bharat Swatantra Amruta Mahotsava Science Lecture Series – 03 Genetic Nutrient Biofortification of Food Crops by Prof. C Kameshwar Rao	-	115
14	05 June 2021	Environmental Day Celebration Sessions - Ecological restoration of mangroves: A potential implication for climate change mitigation, by Dr. Raman Kumar Trivedi and 'The Science - Law Interface: A Futuristic Pointer for Environmental Management?', by Dr. R. Nagendran	Pilikula Regional Science Centre, Mangalore and Surana College, Bengaluru	116
15	07 June 2021	Taking Charge of Your Health Reducing Lifestyle Risk Factors by Dr. Pratima Murthy	-	65
16	08 June 2021	Neuromuscular Disorders by Dr. Gayathri N	-	121
17	08 June 2021	Understanding Electroconvulsive Therapy (ECT) by Dr. Chittaranjan Andrade	-	123
18	09 June 2021	Bharat Swatantra Amruta Mahotsava Science Lecture Series – 04 Role of Food, Nutrition, Lifestyle in Enhancing Immunity by Dr. V Prakash	-	305
19	10 June 2021	Orientation and Skill Development for SSLC Students	Gravity Science Foundation	667
20	11 June 2021	Showcasing AI START-UPS Solving Problems of Farming Systems and Future Opportunities	ICAR, NaaViC and NIVEDI	923
21	11 June 2021	Vijnana Prasara – Scope Kannada Webinar: ಕರ್ನಾಟಕದ ಬಾವಲಿಗಳು - Shri Rajesh P	-	50

Sl. No	Date	Program Title	Associate Institution/ Organisation	Beneficiaries (No.)
22	16 June 2021	Bharat Swatantra Amruta Mahotsava Science Lecture Series – Lecture 5: Equity and Inclusion in Science -Dr Godbole Rohini Madhusudan	-	164
23	23 June 2021	Bharat Swatantra Amruta Mahotsava Science Lecture Series –Lecture 6: Patient in an Unknown World– Nadoja Dr P. S. Shankar	-	142
24	July 3, 2021	Overview of Brain Tumor by Dr. Vani Santosh		107
25	July 07, 2021	Bharat Swatantra Amruta Mahotsava Science Lecture Series – 07 Indian Space Programme: Contribution to Independent India by Dr A S Kiran Kumar		477
26	July 8, 2021	Parkinson’s Disease by Dr. Phalguni Anand Alladi, Scientist-F NIMHANS, Bengaluru		161
27	July 12, 2021	Careers Beyond Medicine and Engineering by Dr Katre Shakuntala and Dr S M Shiva Prakash		272
28	July 14, 2020	Bharat Swatantra Amruta Mahotsava Science Lecture Series – 08 Why is it Rocket Science? by Dr B N Suresh		136
29	July 15, 2020	The Aging Brain by Dr.Sarada Subramanian Senior Professor, NIMHANS, Bengaluru		61
30	July 16, 2020	Kutuhali Kannada Webinar– Covid 19 and Children : Dr G. S. Kumar		69
31	July 17, 2021	Nanotechnology in Medicine by Dr. Rugmani Meenambal, DST-Inspire Faculty, NIMHANS, Bengaluru		87
32	July 20, 2021	Commemoration of Int. Year of Fruits and Vegetables: Expert Talk – I by Dr Sunil Archak		67
33	July 28, 2021	Bharat Swatantra Amruta Mahotsava Science Lecture Series – 09 Societal Implications of the National Space Endeavour by Prof. K Kasturirangan		216
34	July 30, 2021	Towards Smart Farming - Prof. S Ayyappan, Chairman, KSTA; in association with Gravity Science Foundation		198
35	August 20, 2021	Expert Talk Series in Commemoration of Int. Year of Fruits and Vegetables: Expert Talk – II by Dr Santosh Attavar		134
36	September 20, 2021	Expert Talk Series in Commemoration of Int. Year of Fruits and Vegetables: Expert Talk – III by Dr Sudha Mysore		63
37	October 4 – 9, 2021	World Food Day	St. Aloysius College, Mangaluru	125
38	October 8, 2021	Emergency Trauma Care	Garden City University, Bengaluru	210

Sl. No	Date	Program Title	Associate Institution/ Organisation	Beneficiaries (No.)
39	October 27– 29, 2021	Nobel Prize Lecture Series 2021	-	70
40	November 08 – 10, 2021	National Conference on Fruits and Vegetables for Health and Nutrition (FVHN 2021)	UAS, Bagalkot IIHR, Bengaluru and Vigyan Prasar, New Delhi	321
41	November 23 – 25, 2021	Science Videography Training Programme	Kutuhali, Vigyan Prasar, New Delhi	105
42	Nov 30 – Dec 10, 2021	Science Talent Search Program	KSTePS	578
43	December 20 – 31, 2021	Science Talent Search Program conducted for PUC students	KSTePS	109
44	December 22, 2021	International Seminar: Medical Ethics in Teaching, Research and Practice	BLDE Shri B.M. Patil Medical College, Hospital and Research Center, Vijayapura	126
45	January 03 – 29, 2022	Science Talent Search Program conducted for PUC students	KSTePS	354
46	March 17, 2022	Telemetry Day		120

### Physical

Sl. No.	Date	Topic	Association	Beneficiaries (No.)
47	March 10, 2022	Space Science Day	-	135

### Hybrid (Online & Physical)

Sl. No.	Date	Topic	Association	Beneficiaries (No.)
48	March 15- 19, 2022	Workshop on Introduction to Statistical Data Analysis using R- Software. Participants were trained under a team of scientist from IIIT-B		57
49	March 26 - 30, 2022	National Seminar on the Nutraceutical World	Padmashree Institute of Management and Science, Bengaluru	226

## 2. Awards for Kannada Writers in Science & Technology, Agriculture and Medicine

In order to encourage publication of Kannada books in the field of science, technology, agriculture and medicine, KSTA has been awarding prizes for selected good books published in Kannada. The selected authors for the year 2020-21 were felicitated with a certificate and a cash prize of Rs. 25,000/- each in the Executive Committee meeting of KSTA.



## 3. Essay Competition

KSTA conducted various competitions for the PG, UG and General Public during 2020-21 on the following topics:

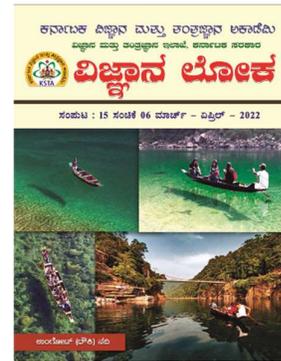
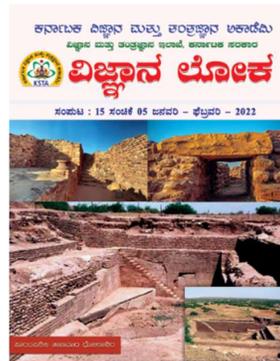
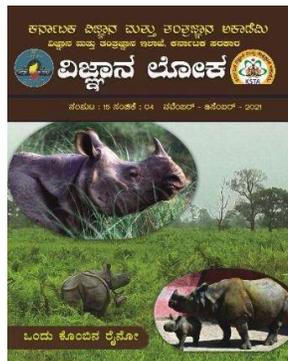
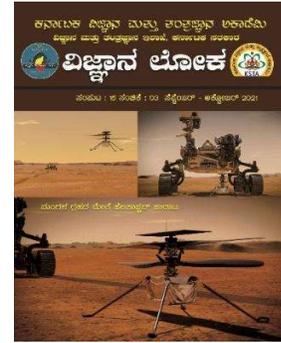
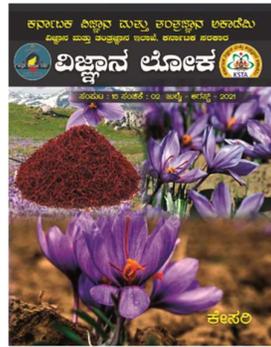
PG Level	UG Level	General Public
Fuel of the Future: Hydrogen	Global Warming Mitigation: Achievements of India	Citizen Responsibility in Mitigating Global Warming

The prizes for the winners of competitions were distributed in the month of September 2021.

## 4. Vijnana Loka

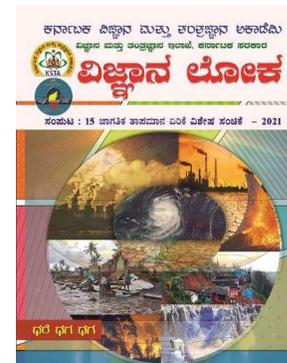
'Vijnana Loka', a bimonthly science magazine is being regularly published in Kannada since August 2007. During FY 2021-22, six issues of the magazines were published. 2000 copies of each issue were distributed to subscribers comprising of pre-university and science degree colleges, science centres,

libraries and other organizations across the state. All the issues of *Vijnana Loka* magazine were made available in the KSTA website: [www.kstacademy.in](http://www.kstacademy.in)



## 5. Special Issue on 'Global Warming'

A special issue of *Vijnana Loka* comprising of 29 invited articles written by renowned science writers on climate change was published. This special issue has been sent to subscribers comprising of universities, UG colleges, science centers, general public, libraries and other institutions.



## 6. Quarterly e-Newsletter – *Vijnana Vahini*



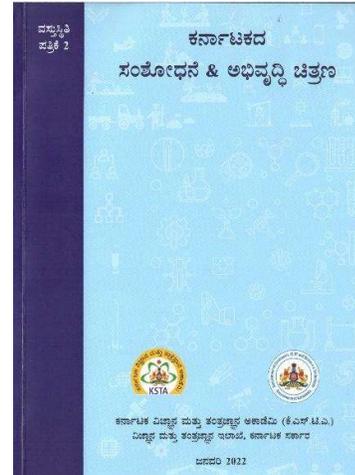
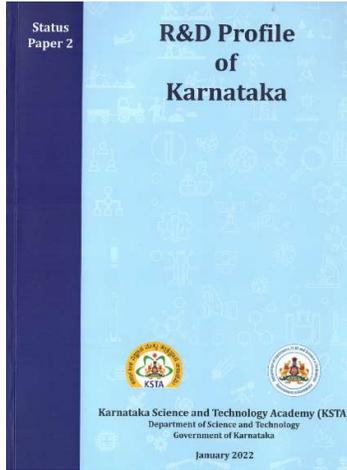
Bring out quarterly e-newsletter '*Vijnana Vahini*' in Kannada and English. The newsletter comprises of invited article, events and upcoming programmes of the Academy and current Science news. During FY 2021-22, 04 issues have been Brought out.

## 7. Small Grants and Short-term Studies

KSTA has been supporting Workshops, Symposia and Seminars, as also short-term Studies, to spread scientific awareness, especially among students; introduce teaching faculty to new horizons of Science & Technology; create awareness on contemporary issues related to Science & Society. As many as 152 institutions were supported during the FY 2021-22.

## 8. R&D Profile of Karnataka

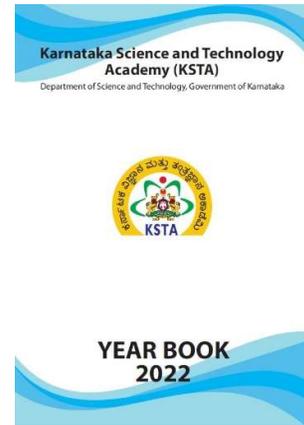
Karnataka is in the forefront of 'Science for Society' endeavours, with Bengaluru being the Knowledge Hub and Science Capital of the country. Although there are databases of various kinds providing information on the



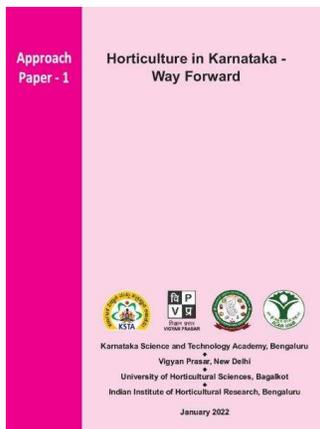
multilateral S&T efforts, it is hard to obtain a glimpse of these in one place, as observed by the KSTA Team. In order to fill this gap, the Academy undertook an exercise to enlist institutions in R&D efforts, both in public and corporate sectors, which resulted in this document. It is hoped that this would serve as reference material for researchers in both R&D and academic institutions. The major areas that have been included are: ICT and Electronics; Biotechnology; Education; Astronomy, Space Science and Defence; Health and Medicine; Production and Manufacturing; Energy; Agriculture and Food Technology; Earth, Environment and Ecotourism; and Frontier Science and Technology, along with ranking of the State with regard to S&T as well as Development parameters.

## 9. Year Book 2022

Year book comprising the details of fellows, associates, institutional members and institutions having MOU with academy has been published. The document consists of details of 127 KSTA Fellows, 07 Institutional Members, 02 Institutional Associates, 52 Associates and 35 organisations having MOU with KSTA.



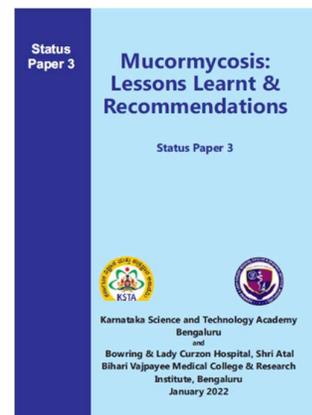
## 10. Approach Paper 01 - Horticulture in Karnataka: Way Forward



Karnataka Science and Technology Academy (KSTA), University of Horticultural Sciences (UHS), Bagalkot and Indian Institute of Horticultural Research (IIHR), Bengaluru and Vigyan Prasar, DST, New Delhi, Govt. of India jointly brought out an approach paper on “Horticulture in Karnataka: Way Forward”.

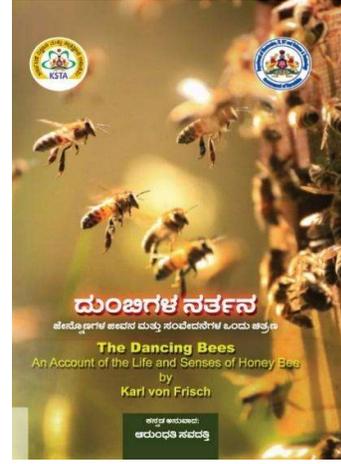
## 11. Status Paper 03: Mucormycosis: Lesson Learnt & Recommendations

Considering the importance of mucormycosis and to create awareness, this Status paper has been brought out by KSTA. The paper is based on the presentations and discussions held by a group of practicing Medical specialists, led by Dr Ravishankar, C., Professor & Head, Department of ENT, Bowring & Lady Curzon Hospital, Shri Atal Bihari Vajpayee Medical College & Research Institute, Bengaluru and has been brought out under the editorship of Prof. P. S. Shankar, Emeritus Professor of Medicine, Rajiv Gandhi University of Health Sciences and Chief Editor of *Vijana Loka*.



## 12. *Dumbigala Nartana* - book

The Kannada version of Carl Von Frisch's famous book 'The Dancing Bees' translated by Mrs. Arundathi Savadathi has been published by the academy.



## 13. KSTA Meetings

### Annual General Body Meeting

- Eleventh AGM was held on August 26, 2021 from 2:30 pm to 3:30 pm.

### Executive Committee Meeting

- Thirteenth EC meeting was held on August 06, 2021 from 2:30 pm to 4:15 pm
- Fourteenth EC meeting was held on October 29, 2021 from 3:00 pm to 4:00 pm
- Fifteenth EC meeting was held on 16th Feb 2022 from 3:00 pm to 4:00 pm

## 14. MOU AND Collaborations

During FY 2021-22, MOU with 17 organisations/institutions were signed with the following purpose and scope. In total, as many as 45 organisations are having MOUs with KSTA:

- Inculcating scientific temper across civil society through science communication
- Facilitating technology dissemination through Academia-Farm-Industry interface, with a focus on rural areas
- Fostering innovations and entrepreneurship for societal benefits
- Organising conferences & outreach programmes
- Capacity building in frontier areas of Science & Technology
- Any other aspects with mutual consent

Sl. No.	Organisations/Institutions	Date of MOU
1	Christ (Deemed to be University)	09.04.2021
2	YKR Adventure Sports and Eco Tourism, Bengaluru	15.04.2021
3	REVA University, Bengaluru	16.07.2021
4	Gulbarga University, Kalburgi	30.07.2021
5	Swadeshi Vijnana Andolana– Karnataka	09.08.2021
6	Tumkur University, Tumakuru	28.09.2021
7	Institute of Public Health, Bengaluru	16-11-2021
8	National Institute of Agricultural Extension Management (MANAGE), Hyderabad	20-11-2021
9	Bangalore Institute of Technology, Bengaluru	01-12-2021
10	Prayoga Institute of Education Research, Bengaluru	06-01-2022
11	The National College, Autonomous, Jayanagar, Bengaluru	06-01-2022
12	Ramakrishna Mission, Shivanahalli, Bengaluru	19-02-2022
13	KRISHI KALPA FOUNDATION, Bengaluru	22-02-2022
14	SHRI B.M. Patil Medical College, Hospital & Research Centre, Vijayapura	02-03-2022
15	Karnataka State Akkamahadevi Women's University, Vijayapur	05-03-2022
16	MS Ramaiah College Of Arts Science & Commerce, Bengaluru	30-03-2022
17	Dayananda Sagar College of Engineering, Bengaluru	07-04-2022

## 15. KSTA Awards

### 15.1 Prof. C. N. R. Rao – KSTA Lifetime Achievement Award in STEAM

KSTA is honouring an accomplished senior scientist/technologist of Karnataka origin by birth/domicile in recognition of her/his outstanding contributions to the field of Science, Technology, Engineering, Agriculture and Medicine (STEAM). The award comprises of a gold medal, Rs 2.00 lakh cash and a citation along with felicitation. Details of awardees are as follows:

Sl.No.	Year	Awardees
1	2021	Prof. Thelma B. K. Former Professor & Bose National Fellow, Department of Genetics, University of Delhi, New Delhi
2	2021	Dr Iddya Karunasagar, Advisor (Research & Patent), Nitte University, Magaluru



**Prof. Thelma B. K.**  
Former Professor & Bose National Fellow,  
Department of Genetics. University of Delhi. New



**Dr Iddya Karunasagar**  
Advisor (Research & Patent),  
Nitte University, Mangaluru

### 15.2 Lifetime Achievement Award for STEAM Communication in Kannada

A senior communicator/journalist/Editor/scientist/technocrat who has made a significant contribution in the area of STEAM communications in Kannada. The selected Awardee will be honoured with a gold medal, Rs 1.00 lakh cash and a citation along with felicitation. Details of awardees are as follows:

Sl.No.	Year	Awardees
1	2021	<b>Dr B. M. Hegde</b> Senior Consultant Cardiologist, PMDRC, Chennai/ Chairman, Bharatiya Vidya Bhavan, Mangaluru
2	2021	<b>Dr. T. R. Anantharamu</b> Former Senior Geologist, GSI, Bengaluru



**Dr B. M. Hegde**  
Senior Consultant Cardiologist, PMDRC, Chennai/  
Chairman. Bharatiya Vidya Bhavan. Mangaluru



**Dr. T. R. Anantharamu**  
Former Senior Geologist, GSI, Bengaluru and  
Science Writer

Hon'ble Minister of Higher Education, Electronics, Information Technology, Biotechnology and Science and Technology, Skill Development,

Entrepreneurship and Livelihoods, Government of Karnataka Dr. C. N. Ashwath Narayana honoured the selected scientist with the awards and fellowships on February 22, 2022. Shri D V Sadananda Gowda, Hon'ble MP, Bengaluru North graced the occasion as Special Guest. Shri S R Vishwanath, Hon'ble MLA, Yelahanka presided over the function. Prof. K VijayaRaghavan, Principal Scientific Advisor to the Hon'ble PM and Dr Sudha Murthy, Chairperson, Murthy Foundation graced the function through Video Conferencing mode. Dr E V Ramana Reddy, Additional Chief Secretary to the Govt., Dept. of Electronics, IT, BT, Science & Technology and Commerce & Industry graced the function as Guest of Honor. Prof. S Ayyappan, Padma Shri Awardee & Chairman, KSTA and Shri A B Basavaraju, Director (Technical), Dept. of Science and Technology and Dr A M Ramesh, CEO, KSTA were present on the occasion.



## 16. KSTA Fellows and Associateships

KSTA is conferring Fellowships, memberships and associateships to recognise contributions of academicians, researchers, engineers, technologists in

institutions and industry as well as promising youth professionals to science & technology, science communication/popularisation and dissemination. In total 28 Honorary Fellowships, 22 Fellowships, 02 Institutional Associateships and 32 were conferred.

### **17. Institutional Members**

Institutions involved in Education, Research and related activities, including Corporate and interested in programs of KSTA are eligible for Institutional Membership. Institutions who are desirous of seeking paid Institutional Membership of KSTA, may do so by paying a fee of Rs. 1,00,000/-(Rupees One lakh only), and submitting a letter of interest throughout the year. During FY 2021-22, five Institutes obtained memberships. In total 08 institutes are having Associateship with KSTA.

### **18. Vigyan Sarvatra Pujyate program**

Azadi Ka Amrit Mahotsav (celebrating the 75th year of Indian Independence) is being celebrated all over the country. In this context, KSTA in association with Vigyan Prasar an autonomous organisation of the Department of Science and Technology, Govt. of India celebrating February 22-28, 2022 as the Glorious Week of Science called “Vigyan Sarvatra Pujyate”. The program was supported by the Department of Biotechnology, DRDO, ISRO, CSIR, Ministry of Earth Science and Department of Atomic Energy. In the event, special talks



by eminent scientists on various scientific topics, science expo by prestigious scientific organisations, science book fair and various competitions for undergraduate and postgraduate students are being organised. Hon'ble Minister of Higher Education, Electronics, Information Technology, Biotechnology and Science and Technology, Skill Development, Entrepreneurship and Livelihoods, Government of Karnataka Dr. C. N. Ashwath Narayana inaugurated the event on February 22, 2022. Shri D V Sadananda Gowda, Hon'ble MP, Bengaluru North graced the occasion as Special Guest. Shri S R Vishwanath, Hon'ble MLA, Yelahanka presided over the function. Prof. S Ayyappan, Padma Shri Awardee & Chairman, KSTA and Shri A B Basavaraju, Director (Technical), Dept. of Science and Technology and Dr A M Ramesh, CEO, KSTA were present on the occasion.

### 19. Digital Content Generation

Digital teaching & learning contents are being developed for the high school students in Physics, Chemistry, Mathematics and Biology as per the Karnataka Secondary Education Examination Board (KSEEB) syllabus in Kannada and are being disseminated through DVD to the selected Government High Schools across the State. The Program is supported by KSTePS.



### 20. Science and Technology Annual Conference

Annual KSTA Conference will be organized in Tumakuru in association with Siddaganga Institute of Technology (SIT) during 5-7 July 2022. Invited talks by leading scientists and scholars on various science and technological developments as well as harnessing S&T applications for sustainable development will be organized apart from poster presentation by research scholars in the Conference.

## **21. Science and Technology Conference in Kannada**

Fourth Science and Technology Conference in Kannada will be organized in Bidar in association with Karnatak College in August 2022. Invited talks by Scientists, leading science writers and communicators will be organized apart from poster presentation by research scholars in Kannada.

### **Contact Details**

Chief Executive Officer

**Karnataka Science and Technology Academy (KSTA)**

Department of Science and Technology, Govt. of Karnataka

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