

Karnataka Science and Technology Academy
(KSTA)

Department of Science and Technology
Government of Karnataka



Annual Report 2020-'21

Prof. U R Rao Vijnana Bhavana, Horticultural Science College Entrance, GVK Campus
Major Sandeep Unnikrishnan Road, Doddabettahalli, Vidyaranyapura Post,
Yelahanka, Bengaluru – 560 097

Content

1. Webinar Programs	2
2. Bimonthly Magazine – <i>Vijnana Loka</i>	5
3. Vision 2030	6
4. Science Communication Policy: Focus Karnataka.....	7
5. COVID-19 Management in Karnataka: Leadership Policy & Strategy.....	7
6. Small Grants and Short term Studies.....	8
7. Quarterly e-Newsletter – <i>Vijnana Vahini</i>	9
8. KSTA Awards	9
8.1 Prof. C. N. R. Rao – KSTA Lifetime Achievement Award in STEAM.....	9
8.2 Lifetime Achievement Award for STEAM Communication in Kannada.....	10
8.3 Awards for Publication of Books in Science, Technology, Agriculture and Medicine	10
8.4 Awards for Young Innovators (UG & PG Students) and Innovation by General Public.....	10
8.5 KSTA Fellows, Associate Members and Institutional Memembers	11
8.6 MOU AND COLLABORATIONS.....	13
Contact Details.....	14

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, an internationally renowned Space Scientist and Former Chairman, Indian Space Research Organization (ISRO) / Secretary, DOS, Govt. of India on July 30, 2005 vide GO No. ವಿಯು ವಿತ್ರಮ 2005. Presently, Prof. S Ayyappan, Chancellor, Central Agricultural University, Imphal and Former Director General, ICAR/ Secretary, Department of Agricultural Research and Education, GOI is the Chairman along with 12 members comprising of renowned educationists, distinguished scientists and senior administrators.

Due to the outbreak of Covid 19 pandemic and consequent lockdown and restrictions, programs through video conference mode were carried out. Details of the major programs successfully organized by KSTA during 2020 – '21 are as follows:

1. Webinar Programs

During April 2020 - March 2021, 47 programs (3 International and 4 National) related to frontier areas of science and technology were conducted through Video Conference (VC) mode in association with research institutes/ science forum/ educational organizations. About 6227 participants benefited by these programs.

Sl. No	Date	Program Title	Associate Institution/ Organisation	Beneficiaries (No.)
1	May 19, 2020	Best Cyber Security Practices in Corona Era:COVID – 19	Shehadripuram First Grade College, Bengaluru	382

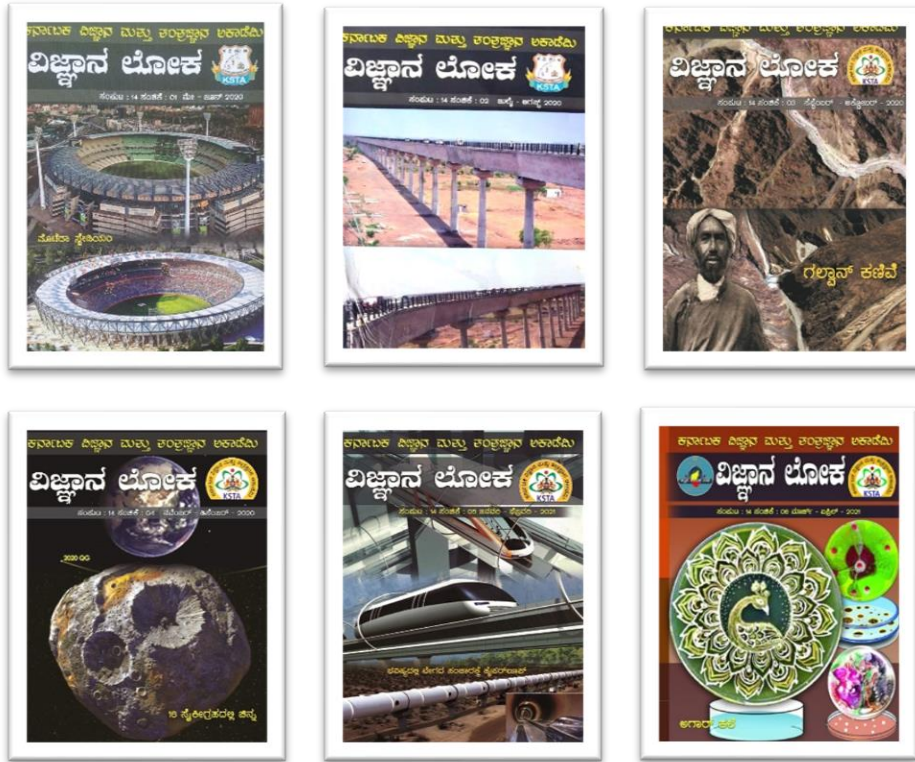
2	May 27, 2020	A Comprehensive Overview of Corona Virus and Latest Updates : COVID – 19	Shehadripuram First Grade College, Bengaluru	298
3	May 28, 2020	A Holistic approach of Development and Conservation of Environment with blend of Modernization & Indian Tradition : COVID – 19	Shehadripuram First Grade College, Bengaluru	375
4	May 29, 2020	Current Update on Transmission, Virology and Epidemiology: COVID – 19	Shehadripuram First Grade College, Bengaluru	243
5	June 2-5, 2020	Web Seminar on Innovation and Intellectual Property Strategy	Shehadripuram First Grade College, Bengaluru	140
6	June 12, 2020	Cyber Security Technical Perspective	-	117
7	June 17-20, 2020	Research Methodology	-	380
8	July 3, 2020	Role of Biotechnology: A Review on Biological Drug Development	-	289
9	July 13, 2020	Role of Yoga and Nutrition	-	120
10	July 14-16, 2020	Applications of Geoinformatics	NRSC, ISRO Bengaluru	40
11	August 4-6, 2020	Innovation and IPR in association with KSCST and SFGC, Yelahanka	KSCST & Shehadripuram First Grade College, Bengaluru	96
12	August 7, 2020	Life After COVID-19	e-Vidhya Association	33
13	August 18-21, 2020	Research Methodology & Authorship Lab Workshop in Collaboration with IEEE COMSOC, Bengaluru Chapter	IEEE Comsoc Bengaluru	30
14	August 26-28, 2020	3rd international conference on Confluence Technologies, AI, Humanoids, Biotechnology, Nanotechnology, Augmented Reality, Virtual Reality, Block Chain, Crypto-currency, Robotics, Automation, Cyber Security & Quantum Physics	SFGC, Yelahanka, MentroX Global New Delhi & Research Foundation India, New Delhi	187
15	August 29, 2020	Indian Space Science and Technology Research: Past, Present and Future by Dr. A S Kiran Kumar, Former Chairman, ISRO, Bengaluru	Gravity Science Foundation, Chamarajanagara	120
16	September 22-25, 2020	Recent Trends in Biotechnology	Sheshadripuram First Grade College, Yelahanka	60

17	October 27, 2020	Monthly Science Lecture Series – 03; Plastic Technology & Opportunities	Gravity Science Foundation, Chamarajanagara	125
18	November 2-3, 2020	KSTA Nobel Prize Lecture Series – 2020	-	100
19	November 7, 2020	Special Talk on Sir C V Raman Birth Anniversary	Gravity Science Foundation, Chamarajanagara	167
20	November 17 to 20, 2020	Career Opportunities in Life Sciences	Garden City University, Bengaluru	177
21	November 21, 2020	Monthly Science Lecture Series – 04 : on Climate Change: Sources, Impact and Management	Gravity Science Foundation, Chamarajanagara	108
22	November 24-26, 2020	Three Days National webinar on Physical Chemistry	SSCASC ,Tumukur and B.V. Bhoomaraddi College of Arts, Science and Commerce, Bidar	80
23	December 4, 2020	Quiz in Chemitrivia (Chemistry Quiz)	Garden City University	223
24	December 5, 2020	World Soil Day Webinar - Soil Day Importance & Conservation of Soil	-	145
25	December 5, 2020	Webinar on Millet diet for diabetics	Garden City University	120
26	December 7, 2020	Quiz on Psychology		46
30	December 7, 2020	Quiz on Application of Physiotherapy Techniques	Garden City University	41
31	December 8, 2020	Poster Making -Psychology as a Science	Garden City University	45
32	December 9, 2020	Webinar-Recent advancement in 3D Printing for Computational Sciences, Life Sciences and Physiotherapy	Garden City University	130
34	December 8-11, 2020	Intellectual Property Rights	KSCST & SRN Adarsha College, Bengaluru	326
35	December 9-10, 2020	Disaster Management Effects of COVID 19 on different sectors	Garden City University	160
36	December 11, 2020	Innovation for Sustainable Development Goals	Garden City University, Bengaluru	63
37	December 15, 2020	Business idea validation challenge	Garden City University, Bengaluru	164
38	December 16, 2020	Quiz on Travel & Tourism	Rotaract Club of Seshadripuram, Bangalore	35

39	December 18, 2020	Introduction to Forensic Science and its scope	Garden City University, Bengaluru	107
40	December 18, 2020	Webinar on Revival of tourism after COVID-19	Garden City University, Bengaluru	63
41	December 19, 2020	Monthly Science Lecture Series -5: Artificial Intelligence and Its Applications	Gravity Science Foundation, Chamarajanagara	145
42	December 22-24, 2020	Srinivasa Ramanujan Memorial Lecture Series	Surana College, Bengaluru and Pawate Institute of Mathematical Sciences, Karnatak University, Dharwad	188
43	December 23-24, 2020	International Webinar on Soil Conservation & Land use Planning - Geospatial Solutions	Department of Geography, Bangalore University	190
44	January 16, 2021	Monthly Science Lecture Series 06: Physics of Flight	Gravity Science Foundation, Chamarajanagara	63
45	January 19-21, 2021-	Advances in Chemical Sciences	Vijaya nagara Srikrishna Devaraya University, Ballari	164
46	January 24, 2021,	Project Anvesha: Recent Research Trend in Agriculture	Rotaract Club of Seshadripuram, Bangalore	35
47	January 27-29, 2021	Recent Advances & Career Opportunities in Engineering & Technology	-	107
48	03 March 2021	Monthly Science Lecture Series – 08	Gravity Science Foundation	31

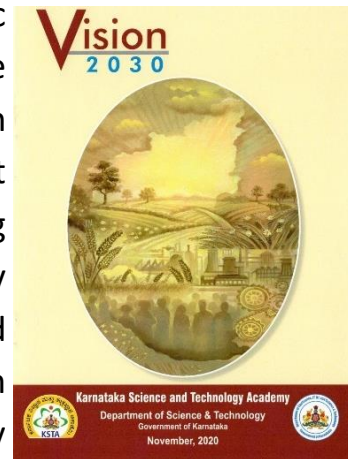
2. Bimonthly Magazine – *Vijnana Loka*

'*Vijnana Loka*', a bimonthly science magazine is being regularly published in Kannada by KSTA since August 2007. During FY 2020-21, six issues of the magazines are published. About 1950 copies of each issue of the magazine were printed and distributed free of cost to pre-university and science degree colleges, science centres, libraries and other organizations across the state. All the issues of *Vijnana Loka* magazine were uploaded in KSTA website – www.kstacademy.in

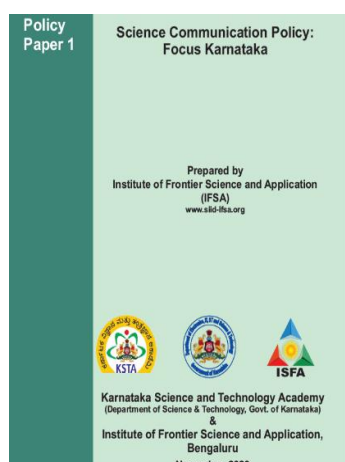


3. Vision 2030

Karnataka is in the forefront with regard to scientific and technological institutions as well as science popularisation and promotional centers. With transformational changes happening in every segment of economy across the world, India is also looking forward for youth empowerment through the recently unveiled National Education Policy-2020 and forthcoming National Science, Technology Innovation Policy-2020. The emphasis is on 'Skills for 21 Century with a Global canvass'. Hence, this is an opportune moment to formulate a Vision for the Karnataka Science and Technology Academy, aligning with the Sustainable Development Goals, that are intended for 2030. KSTA is visioning the next decade for STI (Science, Technology & Innovations) acceptance, appreciation and adoption. Keeping a decade as a time frame for the document, it is necessary to formulate the Vision-2030, with due reference to the resources potentials as well as aspirations of people of the State.



4. Science Communication Policy: Focus Karnataka



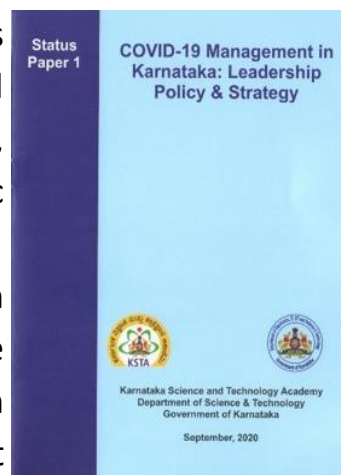
Effective science communication is critical for the last-mile connectivity between science and the beneficiaries, the society at large. Essentially, success of all developmental schemes like Swachcha Bharat, Swastha Bharat, Atmanirbhar Bharat, Lab to land and Samarth Bharat depend crucially on effective science communication to different sections of the population. However, while literacy levels are increasing, scientific literacy is still quite low. Science communication is critical to improve science literacy, and to accelerate development of a knowledge society through eradication of superstitions and blind beliefs, leading to better adaptation of science and technology and ease of implementation of science-based interventions.

Karnataka Science and Technology Academy (KSTA), in association with the Institute of Frontier Science and Application (IFSA), has taken an initiative to develop a Policy Paper with the vision of Development of an Implementable and Inclusive Science Communication Policy for infusion of science and scientific temper in all walks of life and for all social strata. While most issues in science communication in India are generic, there are also several regional issues. The document provides specific recommendations with focus on Karnataka.

5. COVID-19 Management in Karnataka: Leadership Policy & Strategy

The entire world is grappling with novel coronavirus pandemic, which is wreaking havoc on lives and livelihoods. Apart from an unprecedented human toll, COVID-19 has triggered an unfathomable economic crisis.

Extraordinary situations like the pandemic call for an effective leadership in order to ensure effective coordination among various sections of the health care and public services in particular and society at large.



The Government of Karnataka has been endeavoring to address the COVID-19 pandemic with a multi-pronged approach incorporating science, technology, infrastructure, public services and the whole of society, with detection, treatment, rehabilitation and communication.

The Leadership role of the Hon'ble Chief Minister Shri B. S. Yediyurappa and the Hon'ble Deputy Chief Minister Dr Ashwath Narayan, C.N was visible throughout, with the national media interviewing the latter on several occasions, with regard to the management strategy in the State.

The Karnataka Science and Technology Academy, prepared this Status Paper on 'Leadership Policy & Strategy', bringing out the perceptions and responses to the COVID-19 pandemic, at the highest level in the Government. Government of Karnataka has demonstrated an unparalleled vision, coordination and action with regard to the COVID-19 management, that can set an example for the country.

This Status Paper is being presented as a knowledge base with practical approaches, for managing critical situations in the Society, where leadership has played a pivotal role, with regard to both policy and strategy. Karnataka, with an edge with regard to Science & Technology in the whole country, has been able to project the immense potentials, when combined with an Innovative Leadership, and this publication is expected to be a reference document for all States.

6. Small Grants and Short term Studies

KSTA has been supporting Workshops, Symposia and Seminars, as also short term Studies, to spread scientific awareness, specially among students; introduce teaching faculty to new horizons of Science & Technology; create awareness on contemporary issues related to Science & Society. During the FY 2020-21, as many as 33 proposals under small grants, while short term studies 23 proposals are being supported.

7. Quarterly e-Newsletter – Vijnana Vahini



Bring out quarterly e-news letter 'Vijnana Vahini' in Kannada and English. The news letter comprises of invited article, events and upcoming programmes of the Academy and current Science news from all over the world.

8. KSTA Awards

8.1 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 since 2007 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 in the inaugural function of the KSTA Annual Conference or any other similar programs of KSTA.

Four senior scientist/technologist have been conferred with Prof. CNR Rao Lifetime achievement award – two each for the year 2019 and 2020 on March 02, 2021. Hon'ble Deputy Chief Minister and 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 conferred various awards and fellowships. The function was presided over by the Hon'ble Member of Legislative Assembly of Yelahanka constituency and Chairman, Bangalore Development Authority, Shri S. R. Vishwanath. Former Rajyasabha Member and Former Chairman, ISRO Padmavibushana Dr. Kasturirangan graced the occasion as the Chief Guest.

Sl.No.	Year	Awardees
1	2019	<p>1. Dr M Mahadevappa Former, Vice Chancellor, University Agricultural Sciences, Dharwad</p> <p>2. Prof. C Kameshwara Rao Former Chairman, Department of Botany, Bangalore University, Bengaluru</p>

2	2020	1. Dr K Kasturirangan Former Chairman, ISRO 2. Dr Godbole Rohini Madhusudan Professor, Center for High Energy Physics, IISc., Bengaluru
---	------	---

8.2 Lifetime Achievement Award for STEAM Communication in Kannada

A senior communicator/journalist/Editor/scientist/technocrat who has made a significant contributions 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 in the inaugural function of the KSTA Conference or any other similar programs of KSTA.

Two communicator/journalist/editor/scientist/technocrat have been conferred with KSTA Lifetime achievement award in Kannada– One each for the year 2019 and 2020, on March 02, 2021.

Sl.No.	Year	Awardees
1	2019	Shri Nagesh Hegde Science Editor, Environmental Journalist, Science Communicator
2	2020	Dr. C. R. Chandrashekar Former Professor of Phychiatry, NIMHANS, Bengaluru

8.3 Awards for Publication of Books in Science, Technology, Agriculture and Medicine

In order to encourage writing and publication of books in Kannada in the fields of science, technology, agriculture and medicine, Best Book award is being provided since 2009 once in two years. The selection for the year 2020-21 is under process and the authors of each selected book will be falicitated with a cash price of Rs. 25,000/- along with certificate in the month of July 2021.

8.4 Awards for Young Innovators (UG & PG Students) and Innovation by General Public

Exemplary innovations/ solutions emanating from Science & Technology or any segment of economy that have helped transform the lives of people, particularly in rural areas or have enabled enterprises and employment would be recognised every year. The three categories of Award includes are Dr S. K. Shivakumar Award for best innovation at undergraduate level (3); Prof. U. R. Rao Award for best innovation at postgraduate level (3); and KSTA Award for best innovation by General Public (3), each award carries a cash prize of Rs 10,000 each and a Certificate. The award will be conferred during July 2021.

8.5 KSTA Fellows, Associate Members and Institutional Memembrs

Being an Academic entity, the KSTA proposes a scheme of Fellowships, Memberships and Emeritus Consultants 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 74 Honorary Fellowships, 03 Felloships, 26 Associate Members and 04 Institutional Members are conferred by the end of FY 2020-21.

a) Honorary Fellowships

Sl.No.	Awardees
1	Prof. C N R Rao
2	Dr. V Prakash
3	Dr P S Shankar
4	Prof. H Sharatchandra
5	Dr. V K Atre
6	Dr. B. N. Suresh
7	Dr. A S Kiran Kumar
8	Dr H. R. Krishnamurthy
9	Prof H. A. Ranganath
10	Prof. K. Balaveera Reddy
11	Prof. B.G. Mulimani
12	Prof. S.K. Saidapur
13	Prof. V G Talawar
14	Prof. A. H. Rajasab
15	Dr D. Channe Gowda
16	Dr A. E. Eknath
17	Prof. Katre Shakuntala
18	Prof. H S Savithri
19	Shri. Nagesh Hegde
20	Dr E V Ramana Reddy
21	Dr Prakash M Sobarad
22	Prof. S. Ayyappan
23	Dr M Mahadevappa
24	Prof. C Kameshwara Rao
25	Dr K Kasturirangan
26	Dr Godbole Rohini Madhusudan
27	Dr C R Chandrashekar
28	Prof. S Ramashsha
29	Dr P Satishchandra
30	Prof. G U Kulakarni
31	Dr Pratima Murthy
32	Dr G Gururaj
33	Prof. M K Surappa
34	Prof. Mathur R N Murthy

Sl.No.	Awardees
35	Prof. Indrani Karunasagar
36	Dr Munivenkatappa Sanjappa
37	Dr Hemalatha Balaram
38	Prof. N B Ramachandra
39	Prof. Kusal Kanti Das
40	Dr H L Sreenath
41	Prof. V Nagaraja
42	Prof. Raghavendra Gadagkar
43	Prof. K Muniyappa
44	Dr K Chidananda Gowda
45	Dr G K Narayana Reddy
46	Dr S M Shivaprasad
47	Dr K Byrappa
48	Prof. S C Sharma
49	Dr M R Srinivasan
50	Prof. K J Rao
51	Prof. N Rudraiah
52	Prof. H S Mukunda
53	Prof. M R S Rao
54	Prof. S V Subramanyam
55	Prof. Shadaksharaswamy M
56	Narasimhaiengar Mukunda
57	Dr Vinay L Deshpande
58	Prof. Amulya K N Reddy
59	Prof. H N Ramachandra Rao
60	Dr K.V. Prabhu
61	Dr N.K. Krishna Kumar
62	Dr T. Shivanandappa
63	Dr Ramakrishna
64	Prof. B. Venkatesh
65	Prof. K.S. Rangappa
66	Dr N.R. Shetty
67	Prof. N.M. Bujurke
68	Dr C. N. Manjunath
69	Prof. M.I. Savadatti
70	Prof. K. Siddappa
71	Dr H. Honne Gowda
72	Prof. R.S. Deshpande
73	Dr Mruthyunjaya
74	Prof. S R Niranjana

b) Fellowships

Sl.No.	Awardees
1	Dr C N Ravishankar
2	Dr Raghavendra Bhatta
3	Dr Govind R Kadambi

c) Institutional Members

Sl.No.	Awardees
1	University of Agricultural Science, Raichur
2	SRN Adarsha College, Bangalore
3	Surana College, Bangalore
4	Garden City University, Bangalore

d) Associate Members

Sl.No.	Awardees
1	Dr K. Ramakrishna Reddy
2	Dr. Vedamurthy A. B.
3	Prof. C. D. Patil
4	Dr K. S. Lokesh
5	Dr P. M. Patil
6	Dr Prakashgouda G Patil
7	Dr R. S. Dyavanal
8	Dr S. K. Satnoor
9	Dr V. M. Channashetty
10	Dr P. Vithal Reddy
11	Mr. Anilkumar Anadure
12	Dr Mallikarjun Kote
13	Mr. Srikanthrao V Biradar
14	Dr S. B. Gama
15	Dr V. Lokesha
16	Dr Sakuntala Samuelson
17	Mr. Poornaprazna M. G.
18	Mr. D. B. Rathod
19	Dr M. B. Hiremath
20	Dr K. V. Prasad
21	Dr Prabhakar Sangurmath
22	Mr. Jagadeesh M Shettar
23	Mr. Rachayya Swamy
24	Dr R. S. Raveendra
25	Dr R. Krishnaveni
26	Dr S. R. Ramesh

8.6 MOU AND COLLABORATIONS

During FY 2020-21, MOU with 23 organisations/institutions were signed with the following purpose and scope:

- 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	NIAS, Bengaluru	22.06.2020
2	CMTI, Bengaluru	23.06.2020
3	IIHR, Bengaluru	24.06.2020
4	CFTRI, Mysore	25.06.2020
5	Aadichunchanagiri University, B.G. Nagara	01.07.2020
6	Karnataka State Remote Sensing Applications Center (KRSAC), Bengaluru	01.07.2020
7	ICAR-National Institute of Animal Nutrition & Physiology, Bengaluru	01.07.2020
8	Bapuji Institute of Engineering & Technology, Davanagere	02.07.2020
9	ICAR-National Bureau of Agricultural Insect Resources, Bengaluru	15.07.2020
10	Siddaganga Institute of Technology, Tumakuru	24.07.2020
11	University of Mysore, Mysuru	25.07.2020
12	University of Agricultural Sciences, Bengaluru	27.07.2020
13	BVB College, Bidar	28.07.2020
14	KVAFSU, Bidar	30.07.2020
15	JNN College of Engineering, Shimoga	03.08.2020
16	JSS Science and Technology University, Mysore	03.08.2020
17	SJC Institute of Technology, Chikkaballapura	10.09.2020
18	Institute of Health Management Research, Bengaluru	08.09.2020
19	Garden City University, Bengaluru	25.09.2020
20	Srinivasa University, Mukka, Mangaluru	06.10.2020
21	MIET (Mangalore Institute of Technology & Engineering), Moodabidri	17.10.2020
22	CSIR – Central Institute of Medicinal and Aromatic Plants (CSIR-CMAP), Bengaluru	9.11.2020
23	Karnataka State Higher Education Academy, Dharwad	26.11.2020

Contact Details

Chief Executive Officer

Karnataka Science and Technology Academy (KSTA)

Department of Science and Technology, Govt. of Karnataka

Prof. U R Rao Vijnana Bhavana, Horticultural Science College Entrance, GKVK Campus,
Major Sandeep Unnikrishnan Road, Doddabettahalli, Vidyanarayapura Post, Yelahanka,
Bengaluru – 560 097

Ph./Fax: 080-29721550; 080-29721549

email: ksta.gok@gmail.com; website: www.kstacademy.in