



# INNOTRACE

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# FROM THE EDITOR'S DESK



Innovation Day at K-DISC was celebrated over two days in the month of March, incidentally is also the birthday month of great inventors like Albert Einstein and Alexander Graham Bell. A platform to

K-DISC

Dr. P. V. Unnikrishnan highlight our achievements and an Member Secretary, opportunity to connect with our partners and associates was organ-

ised after a gap of three years. Add to that we were also able to honour the major achievers from our various programmes on this occasion. The highlight of the event was the launch of the Kerala Genome Data Centre under the dynamic leadership of Sam Santhosh and the Centre of Excellence in Microbiomes by the Honourable Chief Minister on the first day of the event. These new Centres which are being

set up with the aim of harnessing the power of genomic data and the rich biodiversity of our State, are certain to usher in revolutionary changes in health, agriculture and animal husbandry. In the five years since its inception, K-DISC has been effectively using innovation as an accelerator to bring about positive change in society. Recognition came our way this month through the Global Sustainable Award for 2023 conferred by the IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies in Maldives and the Special Jury award for Outstanding Digital Transformation at the KMA - IBS IT Awards 2023 in Kochi.

Day 2 saw a day-long scientific seminar which was attended by eminent international and national scientists and technologists.



### **INNOVATION DAY 2023**

K-DISC celebrated Innovation Day '23 on 13th and 14th March 2023. The two-day event saw the showcasing of the major programmes of the organisation apart from Keynote Addresses, Panel Discussions and sessions on Domains and Technologies. Meritorious contributors in various challenges of K-DISC were honoured during the event.





Shri K. N. Balagopal, Honourable Minister for Finance, inaugurated the Innovation Day on the morning of 13th March at Mascot Hotel. He also announced the names of team members of the State-level winners of the Young Innovators Programme 3.0. In the evening function, Shri. Pinarayi Vijayan, Honourable Chief Minister, announced the launch of two new programmes of K-DISC, viz., Kerala Genome Data Centre and Centre of Excellence in Microbiomes. He also gave away the awards for the department and individual winners of the

Citizen Satisfaction - One Department One Idea (CS-ODOI) challenge. Shri. Shahul Hamid of the GST Department was the winner of the first prize. The CM and Shri. P. Rajeeve, Honourable Minister for Industries, gave away the awards for CS-ODOI and support in YIP 4.0. The Industries Minister also released a booklet titled 'Introduction to Genomics and Establishment of Kerala Genome Date Centre' authored by Shri. Sam Santhosh and Dr. Amitabha Chaudhuri. Shri. V. K. Prasanth MLA, Smt. Arya Rajendran, Mayor, Thiruvananthapuram Corporation, Dr. K. M. Abraham, Executive Vice Chairman, K-DISC, Dr. P. V. Unnikrishnan, Member Secretary, K-DISC, Smt. Sajitha P. P., Executive Director, Management Services, K-DISC and Shri S. Suresh Kumar, Senior Administrative Officer, K-DISC spoke on the occasion.

Advocate D. Suresh Kumar, District Panchayat President, Thiruvananthapuram, Shri. Anoop Ambika, CEO, Kerala Startup Mission and Shri. Santhosh Kurup, CEO, ICT Academy of Kerala offered felicitations. The CM said in his address that the Kerala Genome Data Centre,





which is being set up with the aim of curating and publishing genome data by following models existing at the international level, would become a critical step in medical research and healthcare, study of critical genetic problems and increasing productivity of the primary sector. It would also provide crucial data to the research institutes and biotech companies to develop new pharmaceutical products.

Other events on the 13th included a keynote address on '5G to 6G – Opportunities and Challenges for India' by Dr. Kiran Kumar Kuchi, Professor, IIT Hyderabad and a panel discussion

on 'The Impact of Artificial Intelligence on Society and Governance' anchored by Dr. Saji Gopinath, Vice Chancellor of Digital University. Shri. Mohammed Y. Zafarulla IAS, OSD, Finance (Resources) Department, Shri. N. Subramanian, Executive Director, Society for Electronic Transactions and Security, Chennai and Shri. Jeethu Joseph, Enterprise Architect, TCS were the panelists. Shri C. Padmakumar, Special Officer, Kerala Medical Technologies Consortium, gave a presentation on the KMTC journey so far. Dr. Arun Surendran, Principal, Trinity College of Engineering moderated a discussion on Kerala Knowledge Economy Mission. The panel consisted of Dr. C. Madhu Sudhanan, State Program Manager,



KKEM, Dr. Sreekala P. S, Director, KKEM and Shri. Santhosh Kurup, CEO, ICTAK. Dr. Arun also led a discussion on ITI skills challenge for Young Innovators Programme while Shri. Biju Parameswaran anchored an open house with YIP domain institution partners. The LSGI Cohort 2 workshop held on that day saw participation by Panchayats along with the One Local Government One Idea (OLOI) program team. Shri. Anwar Sadath, CEO, Kerala Infrastructure and Technology for Education (KITE) delivered a talk on the Government's upcoming Freedom Fest 2023 event in August. The evening was topped off with a variety cultural programme by the Social Inclusion team.







The Honourable Chief Minister of Kerala, Shri. Pinarayi Vijayan with Shri. V. K. Prasanth MLA, Dr. K. M. Abraham, Dr. P. V. Unnikrishnan, Shri. Biju Parameswaran, YIP Program Executives and State-level winners of YIP.

# AWARD DISTRIBUTIONS: CITIZEN SERVICE -ONE DEPARTMENT ONE IDEA(CS-ODOI)





# AWARD DISTRIBUTION: YOUNG INNOVATORS PROGRAMME





**PROGRAMME LAUNCH:** Kerala Genome Data Center (KGDC) and Microbiome CoE

**KEYNOTE ADDRESS:** Emerging Technologies -5G to 6G - Opportunities and Challenges for India





#### **PANEL DISCUSSION:** "The Impact of AI on Society and Governance"



A panel discussion on the topic "The Impact of AI on Society and Governance" was moderated by Dr. Saji Gopinath, Vice Chancellor of Digital University, Kerala. The panel members were Mr. K. Mohammed Y. Safirulla, IAS-OSD, Finance (Resources) Department; Shri. Subramanian N. (Executive Director, SETS-Society for Electronic Transactions and Security, Chennai); and Shri. Jeethu Joseph, Enterprise Architect, TCS, Kerala.



A PANEL DISCUSSION on Kerala Medical Technology Consortium (KMTC) by Shri. C. Padmakumar, Special Officer, KMTC



#### PANEL DISCUSSION: Kerala Knowledge Economy Mission



A panel discussion on KKEM was moderated by Dr. Arun Surendran, Principal, Trinity College of Engineering, Core Group Member, KKEM. The panel members were Dr. Sreekala P S, Director, KKEM; Shri. Santhosh Kurup, CEO, ICTAK and Dr. C. Madhu Sudhanan, State Program Manager, KKEM.



YIP DISCUSSION: Kerala Skillstars Challenge



A Talk on Freedom Fest 2023 was done by Shri. Anvar Sadath, CEO, KITE



One District One Idea (ODOI)







ONE LOCAL GOVERNMENT ONE IDEA (OLOI) WORKSHOP









#### CULTURAL PROGRAMME BY SOCIAL INCLUSION TEAM





#### KERALA GENOME DATA CENTRE (KGDC) SCIENTIFIC SEMINAR 14th March 2023



The second day of Innovation Day '23 was conducted in the form of a day-long scientific seminar on Kerala Genome Data Centre (KGDC) held at Hotel Hycinth on 14th March 2023. The seminar saw talks and lively discussions featuring national and international experts in the fields of Bioinformatics, Data Centre Design, Tools & AI, Agricultural Genomics, Microbiome @ One Health, Animal @ Aquatic Health and Ancient DNA. Some of the prominent speakers included Dr. Achuthsankar S. Nair, Dr. Jeff Wall, Dr. Ramesh Hariharan, Dr. Sabu Thomas, Dr. C. Ramchand and Dr. Vinod Scaria. Honourable Minister for Health Smt. Veena George delivered the valedictory address.



#### YIP SHOWCASING AT THE IEDC SUMMIT AT RAJAGIRI COLLEGE, KOCHI 4.3.23





Sanitary Napkin Incinerator and Vending machine was installed at the K-DISC Innovation Tower in connection with the Womens' Day celebrations followed by a cake cutting of Women Employees at our Headquarters.



Third Governing body of K-DISC at CM's Conference Hall, Government Secretariat



MG University Vice-Chancellor Dr. Sabu Thomas presents appreciation certificates to the institutes that have registered the most number of ideas in the district as part of the Young Innovators Program 4.0.



K-DISC meeting with SC/ST Minster on Manchadi, Mazhavillu



Member Secretary inaugurating second day (model day) of National Conclave 2023 at Lead College, Palakkad



YIP Planning Workshop





Dr. P. V. Unnikrishnan along with YIP Managers Biju Parameswaran and Bala Subramanian receive the Special Jury award for K-DISC in the Outstanding Digital Transformation category at the Kerala Management Association awards night in Kochi







6th Meeting of the Executive Committee of K-DISC



# MAZHAVILLU

Workshop - 17, 18, 19 March 2023



The third workshop of Mazhavillu - Teach Science for Kerala was held at IRTC, Palakkad on 17, 18 and 19 March 2023. Professor P. K. Ravindran introduced the workshop. The current stages of the rainbow and future programs were discussed. K-DISC representative A. Shaji and Mazhavillu State Coordinator K. K. Sivadasan explained about the integration of rainbow themes, concerns about the future of the project and the problems faced by Manchadi.

It was suggested that the themes of the five centres of Mazhavillu should be integrated into a

final form. It was further added that the workshop should be used for this as the final form is to be submitted to SCERT. T. V. Sajeev shared the preparations to be done before going to Model Residential Schools (MRS) and the need to retain the current koodarams of Mazhavillu. K-DISC Member Secretary Dr. P. V. Unnikrishnan participated online and spoke about the future of the project and the applicability of extending it to MRS. Each theme and its integration with other themes took place over the following days.

# A SESSION ON NOBEL PRIZE IN PHYSICS FOR 2022 AT MAZHAVILLU-TEACH SCIENCE FOR KERALA WORKSHOP. IRTC. PALAKKAD

#### 17 March 2023

"I think we can safely assume that no one understands quantum mechanics," yet it is the most beautiful and precise theory that is ever made by mankind; said renowned physicist Richard P Feynman.

jointly to Alain Aspect, John F. Clauser and Anton Zeilinger "for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science." It may



John Stewart Bell is always an inspiration to minds like me and it is an honour to preach his theory. During the "Mazhavillu - Teach Science for Kerala" Workshop at IRTC, Mundur (17 March, 2023), I got a chance to introduce the idea of Bell's Inequality and its consequences on reality.

"Tell me and I forget. Teach me and I remember. Involve me and I learn." Learning through involvement and experience is the best way and that has been my motto. Since it is an advanced topic, introducing mathematics won't be an effective way to explain. Instead, we went through a series of thought experiments, simplifying things such that everyone can understand the concepts by themselves by connecting it to simple practical things we do in our daily life.



The Nobel Prize in Physics for 2022 was awarded sound complicated but it is not that hard to understand. In order to understand the topic, one must understand the concept of Bell's inequality and how it affects our perception of reality.

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In order to explain the idea, we went through some of the basic principles of Quantum Mechanics, Heisenberg's Uncertainty principle, Superposition principle, Quantum Entanglement and the Copenhagen Interpretation. Equipped with the basics, we then discussed Bell's Inequality. It took an hour of thought provoking experimentation and discussion before the genius of John Bell became evident to everyone and the question of how he solved the age old debate between Albert Einstein and Neils Bohr on the nature of reality was clear. This helped us understand the experimental verification which led to the Nobel Prize in Physics for 2022.

We started this interesting learning from scratch but at the end of it we had understood one of the most advanced principles of Quantum Mechanics. But I believe the understanding is incomplete without the mathematical aspect. So the next step in this journey will be to introduce the mathematics behind it to everyone.



### MANCHADI

During the month of March, the endline assess-Manchadi ment for students at all MRSs was conducted. The assessment was based on the concepts of Number sense. Measurement and Fractions. The f Assessment was conducted to gather some learnings that would help equip Program Executives, Mother Animators and Volunteers, for which training and demo classes were arranged for batches on the basis of Khatakam e with the support of the resource team.



For khatakham 1, sample assessment and training were conducted at MRS Pattuvam, Kannur on 21st and 22nd of February 2023. Mother Animators and Volunteers, Program Executive Soumya and resource team members Usha Menon, Amrita, Akhila, Akshaya and Linda participated in the 2 days session.



For khatakham 2, sample assessment and training were conducted at MRS Nalloornadu, Wayanad on 24th and 25th of February 2023. Mother Animators and Volunteers, Program Executive Janaki Raman and Ramya and resource team members Amrita and Linda participated in the 2 days session.





For khatakham 3, sample assessment and training were conducted at MRS Kattela Trivandrum on 28th February 2023. Mother Animators and Volunteers of MRS Kattela, Program Executives Shahna (Trivandrum), Aswathy (Ernakulam), Libin (Idukki), Arun Roy (Thrissur) and resource team members Amrita and Linda participated in the session.

Khatakham 4 sample assessment and demo class were conducted at MRS Kattela, Trivandrum on 27th of February 2023. Mother Animators and Volunteers of MRS Kattela, Program Executives Shahna (Trivandrum), Visakh (Alappuzha), Mahalekshmi (Kollam), Shereena (Pathanamthitta) and Sreedevi (Palakkad), resource team members Amrita and Linda participated in the session. Observations of each activity were discussed in detail after the Manchadi classes.



# ENDLINE ASSESSMENT FOR STUDENTS

An activity-based assessment was conducted among students, to know their understanding of numbers up to 100. The activity was planned in 3 levels. The children who were able to complete level 1 easily were selected to progress to Level 2 and then Level 3. Similarly, students who have a thorough knowledge of measurement were assessed with the help of a specific activity in which students constructed a triangle of sides 20 cm, 10 cm & 15cm without the help of any measuring tools. More follow up activities on measurement were conducted based on the perimeter of a triangle. An interview model assessment was done for the concept of fraction, which includes situations where the students can apply the concepts they have learned. By the end of March, a detailed assessment report of each student of all MRSs was prepared with relevant videos and photographs with the help of corresponding mother animators and volunteers. With these assessment activities, combined with daily observation in the classroom we were able to assess the student's level of understanding in various Mathematical concepts.



Students engaged in number sense activities during the assessment process.





Interview of students during endline assessment on fractions



Engagement of students in Measurement Activities of endline assessment



# KERALA KNOWLEDGE ECONOMY MISSION (KKEM)



"THOZHILARANGATHEKKU" - 14 DISTRICT JOBS FAIRS STATEWIDE

Kerala Knowledge Economy Mission has introduced a new systematic and inclusive project "Thozhilarangathekku" to help employ educated women, those on a career-break, girl students and final years/alumni from different universities from across the state and registrants from Knowledge Job Units through Kudumbashree and Employment officers.

Fourteen District Job fairs were conducted State-wide during February-March 2023. The Kerala Knowledge



Economy Mission with the support of ICT Academy Kerala organised Job Fairs for Women all over Kerala. The Kerala Knowledge Economy District Program Managers coordinated and monitored the job fairs for its effective implementation all over Kerala. There was very good participation in almost all districts in the "Thozhilarangathekku" Job Fairs. 8652 women were shortlisted by companies who conducted interviews in the Job Fairs. Employers arranged interviews both directly and virtually at the venue. In the current scenario, one of the major obstacles that women face is the unavailability of suitable jobs in their own area or districts. Women are also not able to move outside districts due to various personal and societal reasons. The Kerala Knowledge Economy Mission tried to arrange regional employers to attend, so more women were attracted to the "Thozhilarangathekku" Job fairs. Aditya Birla, Preethi Silks, Screl Info Pvt. Ltd., Ayur Herbo Care, Frostees India Pvt. Ltd., SBI Life, Life Insurance Corporation of India etc. were some of the companies who provided jobs for the candidates who attended the Job Fairs.





Status of selected and shortlisted candidate	s all over Kerala
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SL. NO.	VENUE & DISTRICT	SELECTED CANDIDATES	SHORTLISTED CANDIDATES
1	Govt. Arts & Science College, Meenchantha, Calicut	86	482
2	Govt. College Malappuram	98	714
3	Sree Nityananda Polytechnic Kanhangadu, Kasaragod	69	359
4	Govt. College Kattappana,Idukki	32	158
5	Sree Kerala Varma College Thrissur	253	793
6	Govt. Polytechnic College Nattakom,Kottayam	320	517
7	Adi Sankara Institute of Engineering & Technology, Ernakulam	71	481
8	Govt. Victoria College Palakkad	176	911
9	College of Engineering & Management Punnapra, Alappuzha	41	370
10	Don Bosco College Kottiyam, Kollam	49	1050
11	LBS Institute of Technology For Women, Thiruvananthapuram	78	1076
12	Govt. Polytechnic College, Thottada, Kannur	68	911
13	NMSM Govt. College Kalpetta	75	421
14	St. Thomas College Ranni	59	409
	Total Number	1475	8652

#### "Thozhilarangathekku" Offer Letter Distribution and First Phase Completion State Level Inauguration Program

"Thozhilarangathekku" Offer Letter Distribution program and First Phase completion was inaugurated by Hon. Chief Minister of Kerala, Shri. Pinarayi Vijayan on International Women's Day, March 8, 2023 @ Mahatma Ayyankali Hall, Thiruvananthapuram. Kerala Knowledge Mission Director Dr. P. S. Sreekala welcomed everyone to the Offer Letter Inauguration Programme. Shri. Antony Raju, Road Transport Minister gave the presidential address. Hon. Chief Minister Shri. Pinarayi Vijayan delivered the inaugural speech and distributed the Offer Letter to those who were selected through the Job Fairs. Awards were distributed to the Best District Programme Managers based on their performance in Job Fair coordination and other related activities, the District which had the maximum number of registrations for the Job Fair, the Best Employer etc.

Shri. V. Sivankutty, Minister for General Education & Labour, presented the award for the best Community Ambassador. Smt. Arya Rajendran, Mayor, Thiruvananthapuram was the chief guest of the



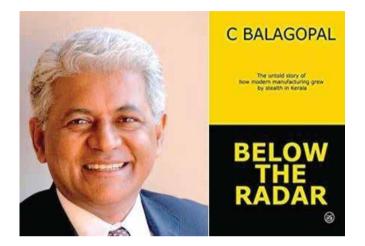
programme. Keynote Address was delivered by Dr. P. V. Unnikrishnan, Member Secretary, K–DISC. Felicitation was delivered by Adv. D. Suresh Kumar, District Panchayat President, Thiruvananthapuram. Vote of Thanks was proposed by Shri. Riyas, General Manager, Skilling, Kerala Knowledge Economy Mission. Nearly 450 people attended the programme from all over Kerala including representatives from ASAP, Kudumbashree, KASE, ICT Academy Kerala, and K-DISC. Organization Stalls were arranged in the venue for the Kerala Knowledge Economy Mission partner agencies. Photo Exhibition of the Kerala Knowledge Economy Mission's journey so far was also arranged at the venue.



# **BOOK TALK BY BIJU PARAMESWARAN**

Review of

Below the Radar: The Untold Story of How Modern Manufacturing Grew by Stealth in Kerala by C. Balagopal



In contrast to his immediate predecessor, the State's Finance Minister K. N. Balagopal is known for sober budget speeches shorn of any quotations or allusions to literature. He however made an exception while presenting the budget in February this year by referring to a short but brilliant book by his namesake, the civil servant turned entrepreneur Chandrasekhar Balagopal. The book, 'Below the Radar: The Untold Story of How Modern Manufacturing Grew by Stealth in Kerala' is revolting in that it stands on its head many a popular myth about Kerala being an unfriendly place for investors.

After studying Economics at Loyola College, Chennai, C. Balagopal joined the Indian Administrative Services in 1977. The reminiscences of those days in Manipur and Kerala are encapsulated in his earlier books 'The View from Kollam: A Day in the Life of a Sub-Collector' and 'On a Clear Day, You Can See India'. The turning point in his life came in 1983 when he quit the IAS and set up Peninsular Polymers (PenPol), a company making blood bags, after a chance meeting with the Head of the Sree Chitra Thirunal Institute for Medical Sciences and Technology. With no prior experience in business or technology or any legacy to back him, and with loan debts piling up, the initial decade was one of struggle for the first generation entrepreneur. But he showed nerves of steel to persevere. In the nearly forty years since its inception, Penpol has gone on to be a

leader in the field with presence all over the world. Healthcare major Terumo Corporation of Japan took it over in 1999. An important lesson that Balagopal learnt, in his own words, was that 'Tomorrow is another day.'

Below the Radar is not about Terumo Penpol alone but also an examination of the emergence of the modern manufacturing sector in Kerala during this eventful period. Balagopal identified 50 manufacturing industries across Kerala, all of whom started small, and now enjoying an international footprint. While accepting that the State has had labour problems, he hastens to add that this has changed in the past three decades. Penpol had trade unions too but it never lost a productive day to strike. He points out how flawed narratives about the failure of the Kerala model brought about a wrong perception among outsiders. While Kerala's literacy and health performance are legendary, the vision of leaders like former Chief Minister C. Achutha Menon who set up institutions like KELTRON gave a shot in the arm to scientific and manufacturing industries in the land. The strong inward remittances from overseas countries, especially the Gulf, shrank the tradeable sectors in Kerala but the Dutch Disease theory was proven wrong in case of the manufacturing sector! Read this book to learn how homegrown firms like Peekay Steels, Synthite or Dentcare are among the world's best engineering companies, and how the ecosystem in the State facilitated their stupendous successes. In the final chapter of the book, the author, who is also the Chairman of Federal Bank, stresses on the need for funding more research to help better public policy. The State Government can, he concludes, be the third strand of the triple helix providing resources and support through KIIFB and K-DISC. No wonder the former Finance Minister Dr. T. M. Thomas Isaac lauded the book as a guidepost for policy makers, entrepreneurs and academics engaged with the industrial transformation of Kerala.



#### **K-DISC IN THE NEWS**





# KERALA KNOWLEDGE ECONOMY MISSION (KKEM)

Digital Workforce Management System (DWMS) targets to become the 'World Largest Talent Hub'. The three different components of the DWMS platform are Job Seekers, Job Providers and Skilling. The Kerala Knowledge Economy Mission is a digital platform-based strategic program launched by the Government of Kerala to transform the state into a knowledge economy.

Vacancies Compiled	4,83,799	
Total Hired	14252	
Live Vacancies	41654	
Data as on 31 Mar 2023		



# **20 LAKH JOBS** BY 2026





#### TEAM BEHIND THE INNOVATION DAY 2023

Mr. Vishnu Prasad, Junior Consultant, K-DISC Ms. Lakshmy K J, Senior Program Executive, K-DISC Mr. Biju Parameswaran, Consultant, K-DISC Ms. Noorjahan A, Junior Consultant, K-DISC and Ms. Anupama V A, Program Executive, K-DISC

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