

ANNUAL REPORT for the year 2019-2020

Dear Members,

I welcome you all to the 40th Annual General Body Meeting of IANCAS. It gives me immense pleasure to present briefly the activities of our Association during the period from April 2019 to March 2020.

MEMBERSHIP

The Association has 1841 life members (LMs) and 19 corporate members as on March 31, 2020 with an addition of 7 life members during this financial year (2019-20).

BRNS-IANCAS WORKSHOPS

A total of 5 workshops including two six-days national workshops, one two-days workshop and two one-day workshops on “Radiochemistry and Application of Radioisotopes” were organized during this period. The brief reports of these workshops are given below.

1. Report on 100th BRNS-IANCAS National Workshop on “Radiochemistry and Applications of Radioisotopes” held at University of Kerala, Kariavattam campus, Thiruvananthapuram, Kerala, during December 9-14, 2019

The 100th BRNS-IANCAS National Workshop on “Radiochemistry and Applications of Radioisotopes” was organized at the Department of Chemistry, University of Kerala, Kariavattam campus, Thiruvananthapuram, Kerala, during the period 9-14, December, 2019. Dr. Madhava B Mallia and Dr. Pranaw Kumar served as workshop coordinator and practical coordinator, respectively. Dr. Sony George, Head, Department of Chemistry, was the convenor and director of the workshop. A total of 55 participants of the workshop included faculty members and research scholars from various departments of University of Kerala, and colleges affiliated to the University of Kerala. The Workshop was inaugurated on 9th December, 2019 by lighting lamp by Dr. P. P. Ajayakumar, Pro Vice Chancellor, University of Kerala, Sri Suresh Babu, Distinguished Scientist & Associate Director, Health, Safety and Environment Group, Bhabha Atomic Research Centre, Dr. Pradeep Kumar Pujari, Distinguished Scientist & Director, Radiochemistry and Isotope Group, Bhabha Atomic Research Centre, Dr. S. M. A. Schibli, Professor, Department of Chemistry, University of Kerala and Dr. Madhava B Mallia, Radiopharmaceuticals Division, Bhabha Atomic Research Centre. Dr. Sony George, Head, Department of Chemistry, University of Kerala, welcomed the participants. Dr. P. P. Ajayakumar emphasized the importance of research in radioisotopes, especially for medical applications, and the need to initiate such activities in University of Kerala. Dr. Pradeep Kumar Pujari, briefly described the activities of IANCAS and the contributions of BARC to radioisotope program in India, especially in health care sector. This was followed by donation of one NaI(Tl) detector and one G. M. Counter by IANCAS to the host institute. Sri Suresh Babu, Chief Guest of the Inaugural function, delivered the keynote address in which he discussed the importance of Nuclear power in the context of global warming. Dr. Madhava B Mallia delivered the vote of thanks. The technical program of the Workshop comprised of 11 lectures and 4 experiments. A total of 5 resource persons conducted the workshop. A quiz competition was conducted every day after the two scheduled lectures. Sri Viju Chirayil conducted the quiz while other resource persons contributed to the questions. It is pertinent to note that this program was highly appreciated by the participants of the workshop. All the lectures were received very well by the participants, which was evident from the questions & answer session following each lecture and subsequent lively discussions. Dr. Ashok Kumar, Dr. Pranaw Kumar, Sri Viju Chirayil and Sri Nilesh Tawade conducted the experiments. The

valedictory function of 100th IANCAS workshop was held on 14th December, 2019 after a Mega quiz based on all the lectures delivered during the workshop. Prof. Schibli, Department of Chemistry, and resource persons from BARC distributed certificates to the participants and also gave prizes to the winners of the quiz competition. A few participants, including students and faculty, shared their views about the workshop. In general, participants found the lectures and experiments very interesting and informative. Department of Chemistry, Kerala University, has already included an elective course on radiopharmaceuticals for post-graduate students and the process of including the experiments has been initiated. The resource persons appreciated the procurement of sealed calibration sources by the host institute through eLORA. The Workshop was concluded with a vote of thanks by Dr. Sony George.

2. Report on 101th BRNS-IANCAS National Workshop on “Radiochemistry & Applications of Radioisotopes” held at Guru Nanak Dev University, Amritsar during Feb 17-23, 2020

The 101th DAE BRNS-IANCAS National Workshop on Radiochemistry & Applications of Radioisotopes was jointly organized by IANCAS & Department of Physics, Guru Nanak Dev University, Amritsar during Feb 17-23, 2020. Dr. Arnab Sarkar, FCD and Dr. P. C. Kalsi, Ex-BARC served as the Workshop coordinators and Dr. Ankita Rao, RACD served as the Practical coordinator. Prof. Jaspal Singh Sandhu, Vice Chancellor, GNDU, Amritsar, was Chief Patron, Local Organizing Committee. Dr. B. S. Bajwa served as Workshop Director and Dr. Inderpreet Kaur served as Workshop Convenor. The Workshop was attended by 45 shortlisted participants from various University/Colleges all over India. The workshop was inaugurated by the Chief Guest Dr. S. S. Chahal, Ex-Vice Chancellor of Maharana Pratap University of Agriculture & Technology, Udaipur and Prof. Emeritus, Panjab University, Chandigarh. In his address as the chief guest, Dr. Chahal spoke in length and details regarding the wide range of applications of radioactivity in different fields like biology, agriculture, and in physics. Dr. P. K. Pujari, Director, RC&IG and Vice-president of IANCAS and Shri Vivek Bhasin, Director, NFG, BARC were Guest of Honour at this function. Dr. Pujari gave a review about the activities of IANCAS in his inaugural address. Shri Bhasin elaborated about the Indian nuclear reactors and their safety aspects in his address as Guest of Honour. Dr. Sarkar discussed about the theme of the workshop which provided an excellent platform for the participants to receive hands-on training and information about the latest developments in the field of Radiochemistry and Radioisotopes. Dr. Kalsi gave a brief information about the association of IANCAS and GNDU. The keynote address was given by Prof. H. S. Virk, the founder Head of Department of Physics. The workshop was covered by electronic media and various newspapers. The technical program of the Workshop comprised of 15 Lectures covering areas such as nuclear structure and stability, radiation interaction and detection, application of radioisotopes in industry, healthcare and research and waste management and five experiments were conducted during the workshop. Each participant was given a set of three books (IANCAS publications) (i) Fundamentals of Radiochemistry and (ii) Nuclear Materials (iii) Experiments in Radiochemistry. A total of 6 resource persons conducted the workshop. A quiz competition was organized on the final day based on lectures and experiments conducted, which was highly appreciated by the participants. Six participants were awarded with gift for their excellent performance in quiz competition. A few participants, including students and faculty, shared their impressions about the workshop. During the valedictory function, Dr. B.S. Tomar, Raja Ramanna Fellow, DAE, and President, IANCAS was the Chief Guest. On behalf of IANCAS, Dr. B.S. Tomar donated one instrument, a NaI(Tl) scintillation gamma ray spectrometer to the institute (GNDU, Amritsar). In his address as Chief Guest, Dr. Tomar emphasized on the major aim of the workshop and thanked all the participants for their sincerity and successful completion of the 7-day workshop. Dr. Ankita Rao, Practical coordinator presented the vote of thanks on behalf of IANCAS team. The workshop concluded with the vote of thanks by Dr. D. P. Singh Head, Physics Department, GNDU.

3. Report on Two-Day BRNS-IANCAS Workshop on “Radiochemistry and Applications of Radioisotopes” held at GLA University, Mathura during September 27-28, 2019

A two-day BRNS-IANCAS Workshop on ‘Radiochemistry and Applications of Radioisotopes’ was organized at GLA University, Mathura during September 27-28, 2019. Dr. Tapas Das, Head,

Radiopharmaceutical Chemistry Section, Radiopharmaceuticals Division, BARC served as the Workshop Coordinator. Prof. S. C. Tripathi, Associate Director (Research), GLA University was the local convener. The Workshop was attended by 42 participants from GLA University and other nearby Institutes of Mathura. Prof. S. C. Tripathi welcomed the participants and delegates. Prof. Anup K. Gupta, Director, Institute of Applied Sciences & Humanities and Dean, Academic Affairs, GLA University emphasized the importance of organizing such workshops in the University and urged the participants to utilize the opportunity of learning to the maximum extent possible. Dr. B. S. Tomar, President, IANCAS and Former Director, Radiochemistry and Isotope Group, BARC mentioned about the important role of radioisotopes and radiations for societal applications and urged the participants to spread the message that radioisotopes and radiations can be used as important tools for improvement in the quality of human life. Dr. S. B. Manohar, former Head, Radiochemistry Division and Chief-Guest of the function delivered the inaugural address, wherein he spoke about the important role played by IANCAS in spreading the societal benefits of nuclear energy to the masses. Prof. Anand Mohan Agrawal, Vice Chancellor, GLA University thanked IANCAS for conducting the work-shop at GLA University and advised the participants to derive maximum benefits through the interactions with the Scientists of BARC. Prof. Dipak Kumar Das, Dean, Student's Affairs & Head, Department of Chemistry, GLA University proposed the vote of thanks. The technical program of the workshop comprised of 6 Lectures covering various aspects of nuclear science, radiation detection and application of radioisotopes and 2 experiments. The radioactive sealed sources, required for conducting the practical experiments were kindly provided by Prof. Amar Nath Garg, Amity University, Noida. In the valedictory function, participants thanked the team IANCAS for conducting excellent workshop. Dr. B. S. Tomar mentioned that IANCAS will be happy to donate a G. M. Counter and a few radioactive sealed calibration sources to the University after completing the regulatory formalities. The workshop was concluded with vote of thanks by Dr. Tapas Das from team IANCAS and by Prof. S. C. Tripathi from GLA University.

4. A One day workshop was organized at K J Somaiya College, Vidyavihar, Mumbai on January 25, 2020 (Saturday). Dr R. Acharya served as the coordinator for the workshop.

5. A One Day workshop on “Nuclear Sciences and Applications of Radioisotopes” was organized at R D & S H National College, Bandra, Mumbai on September 14, 2019 (Saturday). Dr R. Acharya served as the coordinator for the workshop. Dr. (Mrs) Kiron R Jathar, Vice Principal and Dr Ananad Sethi, HOD Chemistry, coordinated from National College.

OTHER ACTIVITIES

A report on 15th International Conference on Modern Trends in Activation Analysis (MTAA-15) at held at BARC, Mumbai during November 17-22, 2019

The DAE-BRNS co-sponsored 15th International Conference on Modern Trends in Activation Analysis (MTAA-15) was organized for the first time in India by BARC during November 17-22, 2019 at the DAE Convention Centre, Anushaktinagar, Mumbai. MTAA-15 was organized in association with Indian Association of Nuclear Chemists & Allied Scientists (IANCAS) and the International Committee on Activation Analysis (ICAA). Dr. P. K. Pujari, Dr. A.V. R. Reddy and Dr. R. Acharya served as Chairman, Organizing Committee, Chairman, Technical Committee and Convener, Organizing Committee of MTAA-15 and Dr. K. K. Swain and Dr R. S. Sathyapriya served as joint Secretaries. About 250 participants including 40 overseas delegates from 23 countries participated in this Conference. The technical program of conference consisted of invited talks and presentation of contributed abstracts (total more than 200 abstracts) during 12 technical sessions and two poster sessions. The Technical Sessions consisted of R&D works carried out in different Labs of various countries related to activation analysis techniques and related techniques utilizing research reactors and particle accelerators. On 21st November 2019, a theme based technical

session on “Applications of Activation Analysis & Activation Products for Forensic Science and Societal Benefits” was conducted at K. C. College, Mumbai as a part of DAE outreach program. Dr. A. K. Mohanty, Director, BARC was the Chief Guest & delivered key-note address. Chief Guest released the MTAA-15 Souvenir (Special Bulletin of IANCAS with selected articles) on “Utilization of Research Reactors in the R&D works on NAA and Production of Activation Products for Societal Benefits”. Organizing Committee is thankful to IANCAS and Dr. B. S. Tomar, President, IANCAS and EC Members for their support for the successful organization of the conference and also in bringing out IANCAS Special Bulletin and coordinating Exhibition Stalls of Scientific Instruments through sponsorship. Many dignitaries who attended the MTAA-15 are Shri S. Bhattacharya, Director, RPG, BARC (Chief Guest of Inaugural Function), Dr. S. Banerjee, Chairman, BRNS (Chief Guest of Valedictory Function), Prof. A. Chatt, President, ICAA, Dr. Zsolt Revay, Chief Editor, J. Radioanalytical Nuclear Chemistry, former presidents of IANCAS Dr D. D. Sood, Dr V. Venugopal and Dr K. L. Ramakumar and many senior Scientists from abroad and India including BARC and DAE as well as faculties from academic institutes.

IANCAS Regional Chapters Annual Reports (2018-19)

IANCAS has four regional chapters to carry out IANCAS activities in various educational institutes (Schools, Colleges and Universities): (i) IANCAS-SRC at IGCAR, (ii) IANCAS Tarapur Chapter, (iii) IANCAS-NRC at Amritsar and (iv) IANCAS-ERC at IOP, Bhubaneswar.

1. Activities of IANCAS–Southern Region Chapter (SRC):

IANCAS special Colloquium

Dr. K. Ananthasivan, Director, Reprocessing Group delivered a lecture on “The story of Boron” on 28th June, 2019 at RCL conference room. The lecture was well received.

Workshops on Radioactivity

IANCAS-SRC conducted nine Radiochemistry workshops in Chennai, Mayiladuthurai, Nagapattinam, and Theni. Details of the workshops conducted in the colleges and schools are given in the following table.

S. No	Name of the School/College	Date
1	KRM Public School, Chennai	03-08-2019
2	Vidyodaya Girls Hr.Sec.School, Chennai	10-08-2019
3	Sethu Bhaskara Matriculation Higher Secondary School, Ambattur	31-08-2019
4	Govt. Poompuhar college of arts and science, Mayiladuthurai, TN	20-09-2019
5	Hindu Senior Secondary School, Adyar, Chennai	02-11-2019
6	A.D.M.College for Women, Nagapattinam, TN.	14-11-2019
7	DAV Boys Senior secondary school, Mogappair, Chennai	18-01-2020
8	Angel Matriculation School, Thiruninravur, Chennai	25-01-2020
9	GD School, bodinayakanur, Theni, TN	22-02-2020

Executive committee, Southern Region Chapter (2018-2021)

S.No.	Name of the post	Name
1	President	Dr. K. Ananthasivan, AD, M&FCG, MC&MFCG
2	Secretary	Dr. K. A.Venkatesan, SO/H, FChD, M&FCG, MC&MFCG
3	Treasurer	Dr. R. Kumaresan, SO/F, MF&PD, MFRG, MC&MFCG

4	Member	Smt. Rajeshwari, SO/F, AC&SSD, M&FCG, MC&MFCG
5	Member	Dr.N. Desigan, SO/F, RRDD, RPG
6	Member	Dr. M. Bootharajan, SO/E, AC&SSD, M&FCG, MC&MFCG

The responses to all the workshops were very good and they were well received. Thanks to the resources persons, Dr. Desigan from RpG, Mrs. N.Navamani, Mr.P.Amarendiran from MC&MFCG, IGCAR, who were keen and dynamic in their participation.

Quiz programme on chemical elements

A quiz programme on chemical elements was conducted for higher secondary students at DAV Boys Senior secondary school, Mogappair, Chennai. Nearly, ten schools were participated the programme and twenty students were shortlisted. The final quiz programme was conducted on 18th January, 2020 at DAV Boys Senior secondary school, Mogappair. The winners were awarded with books and certificates.

2. Activities of IANCAS-Tarapur Chapter:

Not received

Executive Committee, Tarapur chapter (2017-2020)

S.No.	Name of the post	Name
1	Chairman	Shri. S. Pradhan, CS, TNRPO
2	Secretary	Dr. Anil K Pabby, PREFRE
3	Treasurer	Dr.N.L. Sonar, WIP, Tarapur
4	Member	Shri. P.G. Behere, A3F, Tarapur
5	Member	Shri. Gitender Singh, A3F, Tarapur
6	Member	Dr. V.K. Mittal, TWMP, Tarapur
7	Member	Smt. T.P.Valsala, TWMP, Tarapur
8	Member	Dr. Anoop Kelkar, A3F, Tarapur
9	Member	Shri. A. Baburajan, ESL, NPCIL
10	Member	Shri. B. Swain, INRP, Tarapur

3. Activities of IANCAS-northern Region Chapter (NRC)

(i) Symposium on Solid State Nuclear Track Detectors during October 18-20, 2019 held at Khalsa College, Amritsar

The Northern Chapter of IANCAS, to commemorate the fifty years of research on Nuclear Track Detectors in India, organised a Three-Day National Symposium on Solid State Nuclear Track Detectors (SSNTD-2019) during October 18-20, 2019 at Khalsa College

Amritsar. It is heartening to note that 78 scientific papers dealing with the different aspects of SSNTDs were received for presentation at this National Symposium. About 100 participants from all over India (From Guwahati to Punjab) participated in this National event and many of them presented their research papers. The symposium was inaugurated by Dr. Mehal Singh, Principal Khalsa College Amritsar and Chairman, Local organising Committee of the symposium. The Welcome address was delivered by Dr. Taminder Singh, Convener of the Symposium. Dr. P.K. Pujari, Director, RC & I Group, BARC was the Chief Guest. He delivered Keynote Address at the symposium highlighting the research work carried out at RCD, BARC on the SSNTD's during the last fifty years. The symposium was divided into ten sessions comprising of Invited Talk, Oral presentations and Poster presentations in each session. At the Valedictory function, Prof. H.S. Virk, Former Dean, Academic Affairs and former Head, Department of Physics, Guru Nanak Dev University, Amritsar presented an excellent summary of the work done during the last fifty years involving the use of SSNTDs in Indian Universities in general and at Guru Nanak Dev University, Amritsar in particular. Best Paper Awards (Cash as well as Certificates) were given to the young researchers. The vote of thanks was delivered by Dr. P.C. Kalsi, Member, National Advisory Committee.

Executive Committee, Northern Region Chapter (2019-2022)

S.No.	Name of the post	Name
1	President	Dr. M.S. Batra, Khalsa College Amritsar
3	Secretary	Dr. Taminder Singh, Khalsa College Amritsar
5	Treasurer	Dr. Vijay Kumar, Hindu College Amritsar
6	Member	Prof. Shyam Kumar, Kurukshetra University
7	Member	Prof. B.S. Bajwa, GNDU, Amritsar
8	Member	Dr. Iqbal Singh, Khalsa College Amritsar
9	Member	Dr. Samir Kalia, DAV College Amritsar

4. Activities of IANCAS-Easter Region Chapter (ERC) at IOP, Bhubaneswar:

Not received

Executive Committee, Eastern Region Chapter (2017-2020)

S.No.	Name of the post	Name
1	President	Prof. Sudhakar Panda, Director, IOP Bhubaneswar
2	Vice-President	Prof. Susanta Lahiri, SINP, Kolkata
3	Secretary	Dr. Biswajit Mallick, Scientific Officer, IOP
4	Joint-Secretary	Dr. S. N. Sarangi, Scientific Officer, IOP
5	Treasurer	Mr. Bhagaban Behera, IOP
6	Member	Mr. R. K. Rath, Registrar, IOP

7	Member	Prof. N. N. Das, Utkal University
8	Member	Prof. Smruti Prava Das, Ravenshaw University
9	Member	Prof. Sujata Mishra, ITER, SOA University
10	Member	Prof. A. N. Acharya, CET, Bhubaneswar
11	Member	Prof. S. K. Biswal, Centurian University
12	Member	Prof. D. K. Bisoyi, NIIT, Rourkela
13	Member	Dr. P. K. Hota, AHRCC, Cuttack
14	Member	Dr. B. B. Nanda, VDPG College, Jeypore
15	Member	Rojalini Sahu, KIIT University

IANCAS Thematic Bulletins

Two thematic bulletins were published during this period. Details are given below.

Volume No.	Title	Guest Editor (s)	Editor
XV(1)	Mutation Breeding and Post-Harvest Processing for Food Security	Dr. S. J. Jambhulkar & Dr. P. S. Variyar	Dr. Y. K. Bhardwaj
XV(2)	Isotopes in water resource management	Dr. U. K. Sinha	Dr. Y. K. Bhardwaj

ACKNOWLEDGEMENTS:

IANCAS is indebted to Shri K. N. Vyas, Chairman, AEC & Secretary, DAE and Dr. A. K. Mohanty, Director, BARC for their continuous support and encouragement. Thanks are due to Dr. S. Banerjee, Chairman, BRNS for financial support from BRNS to sustain the activities of the Association. IANCAS thanks its Patron Dr. Anil Kakodkar, former Chairman, AEC for his support and encouragement to the Association. IANCAS acknowledges the dedicated efforts and team work of Workshop Coordinators, Resource Persons, Guest Editors and Contributors of thematic Bulletins. We would like to thank IANCAS regional chapters for their contribution in expanding the outreach programme of the Association all across the country. IANCAS also thanks Office Staff as well as supporting staff of Radiochemistry and Isotope Group for their help.

General Secretary