

Voyage through unrealised dreams

Prof. Nongmaithem Rajmuhon Singh

Former Vice-Chancellor, D.M. University, Imphal



I am writing this summary as I approach the end of my three-year term as the First-Regular Vice-Chancellor at Dhanamanjuri (D.M.) University, with only three months remaining as of January 2024. Before this role, I held the position of Professor in the Department of Chemistry at Manipur University and the overall service was approximately 35 years, from 1985 to 2021. My journey at D.M. University began on April 29, 2021.

My educational path has been diverse, from schooling in a rural environment to pursuing higher education in a metropolitan setting. These experiences encompassed various phases, including

school days, college life, and the extensive journey of learning, research, and university teaching. Although challenging, transition into administrative roles has significantly enriched my professional life.

My generation represents the first educated lineage in our family history, as my parents were illiterate, and my grandfather, despite his social standing as the Khullakpa (Chief) of Kakching, was also illiterate. I was born on July 23, 1954, in Kakching Turel Wangma, Uyok Chingya Pareng (now Water-Supply Pareng), Kakching, as the eldest son among eight siblings (four boys and four girls) born to Shri Nongmaithem Sangaijao Singh and Nongmaithem Ibemhal Devi, who were ordinary cultivators.

My wife, Mrs Nongmaithem (O) Mema Devi, got retired as Staff Nurse from Manipur University. I have two children, a daughter and a son. My daughter, Leindah, had completed her M.Sc in Soil Science and Agricultural Chemistry from College of Postgraduate Studies in Agricultural Sciences, Central Agricultural University, Barapani, Meghalaya and PhD from Tamil Nadu Agricultural University, Coimbatore. She also had Post-doctoral work of UGC Women Scientist for five years at Central Agricultural University, Imphal. My son, Robbarts, completed his M.Tech from Indian Institute of Technology (IIT), Kharagpur in Food Process Engineering and PhD in Biological Engineering from University of Saskatchewan, Canada with International Deans' Scholarship.

Academic Career: Schooling to M.Sc. (1960-1982)

I started primary schooling at Kakching Turel Wangma L.P. School in February 1960, completing four years of study up to class II. My grandmother (Abok/Abokpi) had entirely overseen my early education. Next, I enrolled in the third grade at Lilabati Hindi School, Kakching Turel Wangma, a private school. Oja Yengkhom Nimai Singh, a close friend of my father, served as the Head Master. Oja Nimai departed from school to run in the state Assembly elections. He emerged victorious and subsequently assumed the position of an MLA. He assumed the role of Health Minister in the Manipur government in 1966. It was during this period that my dear grandmother passed away. After successfully completing my class IV exam, I gained admission to class V at Kakching High School, now known as Kakching Higher Secondary School, renowned as a prestigious institution in the southern region of Manipur. In 1973, I completed the matriculation (HSLC) Examination with a first division (63%). I received

a letter mark in compulsory Mathematics under the Board of Secondary Education Manipur, the first batch of this Board.

I was pretty pleased with how my academic journey progressed. I ranked at the top in every exam from first to tenth grade. I excelled in nearly every subject included in our curriculum. I do not doubt that my preferred subjects were mathematics and sciences. My brother-in-law, N. Rupo Singh, sparked my curiosity about these two subjects during my sixth-grade studies. Following my matriculation in 1973, I enrolled in the two-year Pre-University Course (Science) at Dhanamanjuri College, Imphal, affiliated to Gauhati University. I achieved a second-class result on the P.U. Examination (Science), 1975. The result took me aback. Throughout those two years, our team faced many social and political obstacles. Our exams were repeatedly delayed because of strikes and protests. Many of our talented peers opted out of taking the exam and enrolled in colleges outside the state, primarily in Shillong, Meghalaya. During that period, regrettably, my grandfather passed away as well. This had a significant impact on both my emotional well-being and my academic performance. Before announcing the results of the P.U.Sc. I took the Entrance Test Examination in 1975 for the MBBS course at the Regional Medical College (now known as the Regional Institute of Medical Science) in Lamphelpat. That marked the inaugural entrance examination for RMC (now RIMS). Previously, the selection process relied solely on the marks acquired in the P U Sc. Exam. I was conditionally chosen for the MBBS program based on my performance in the Entrance Test. The interview, physical test, and other assessments have been completed, and awaiting the mark sheet for the P.U.C. exam. Upon receiving the mark sheet, I discovered that the scores for the combined subjects of Physics, Chemistry, and Biology fell below the required marks for admission to the MBBS course. That exceeded what I had anticipated. I received the following scores in practical exams: (1) Chemistry: 20 out of 50, (2) Physics: 22 out of 50, and (3) Biology: 26 out of 50. As a result, my name was removed from the Final Selection List for the MBBS Course in 1975. Additionally, I had foregone the opportunity to apply for other professional courses such as Engineering, Agriculture, Veterinary studies, etc. Given those conditions, I had to opt for the 'General Line/Course'.

I registered for the B.Sc. undergraduate program at D.M. College under Gauhati University, specialising in Physics, Chemistry, and Mathematics (then known as Royal Science), with Honours in Chemistry. In my batch, 25 students were registered for Chemistry Honours at D.M. College. Nevertheless, only R. K. Radhesana Devi and I eventually took the B.Sc. Chemistry Honours Exam in 1977. The questions in most papers exceeded our expectations, with some papers being particularly challenging. Radhesana and I came very close to choosing

not to take the practical exams. The former Chemistry Department Head, Dr. I.S. Khaidem, comforted both of us, saying, "No, you must attend the practical exams. You are now our sole hope! Over the past two years in a row, our department has failed to graduate any Chemistry Honours students". Therefore, both of us participated in the Practical Exams. Both of us achieved a Second Class (Hons) designation. I ranked eighth in the exam. None of us from our group of Chemistry Honours at Gauhati University that year achieved a First-Class grade. While attending D.M. College during my college years, I was eligible to receive a monthly scholarship of Rs.75 from the Education Department of the Government of Manipur.

Due to my parents' or family's financial limitations, I had minimal expectations of being able to study outside the state for higher education. At that time, Manipur did not offer a Post-Graduate Course in Chemistry.

At times, I considered seeking employment to help provide for our family. At that critical moment, my maternal uncle Kshetrimayum Ibohal Singh, displayed kindness towards our family by offering to cover the expenses for my education and my brother Rajendro's further studies outside Manipur. In 1977, I enrolled at Gauhati University's Department of Chemistry to pursue a Post Graduate Course (PG). While pursuing my postgraduate studies at Gauhati University, I had the opportunity to receive a monthly scholarship of Rs. 110/- from the Education Department, Government of Manipur. I had the privilege of being present at the lecture by Dorothy Crowfoot Hodgkin, who was awarded the Nobel Prize in Chemistry in 1964, in Gauhati at Digali Pukhree, PanBazar, in 1978. Dorothy hails from the Royal Society at Oxford University in Great Britain. She was awarded the Nobel Prize for her ground breaking work using X-ray techniques to determine the structures of crucial biochemical substances, such as Vitamin B-12. Despite my intention to finish my M.Sc. in Chemistry in 1979, I could not do so because of the significant disruptions caused by the Assam agitation and personal reasons. Yet, it ended up being a hidden blessing afterwards. I departed from Gauhati University on July 13, 1980, and proceeded to Kurukshetra University in Haryana to pursue my M.Sc. course again, arriving on July 16, 1980. Fortunately, I secured admission, and my dedication to my studies deepened during my time at Kurukshetra University. My honesty, straightforwardness, and diligent effort made a positive impression on Prof. H.L. Bhatnagar, the Chairman of the Department of Chemistry at Kurukshetra University at that time. It appeared that he had selected me as one of his top students. He looked after me in all aspects as if I were his child. I graduated with a Master of Science degree in Chemistry in 1982, achieving a first-class with the fourth position. My area of expertise was focused on Physical Chemistry. After completing my M.Sc. degree, I submitted applications for the MTech

programs offered by all five IITs in the country. Meanwhile, Professor H.L. Bhatnagar notified me that a substantial "UGC Laser Scheme Project" will soon be initiated at Kurukshetra University. It is unique and the only one of its kind in the nation. He recommended that this plan would greatly benefit me. Therefore, I chose not to attend the interviews for the MTech programs at the IITs, even though I might have received the call letters later. The project commenced, and the announcement was made for a Junior Research Fellow position under the UGC Laser Scheme Project to work on Laser Raman Spectroscopy. The Project was a collaborative effort between Kurukshetra University's Department of Chemistry and the Department of Physics. Professor H.L. Bhatnagar was the lead investigator, while Dr. R.M.P. Jaiswal, a Reader in the Physics Department, acted as the co-investigator. Dr. Jaiswal was a pupil of a student of Prof. C.V. Raman. He conducted postdoctoral research at the University of Illinois in the United States. Playfully, one could consider me as the great-grand student of C.V. Raman. The JRF project interview was conducted. It was a challenging contest, but fortunately, I was chosen and awarded a monthly stipend of Rs. 600/-. The issue of my financial burden was resolved.

M.Phil. & Research Activities at Kurukshetra University (1982-1985)

Meanwhile, I also registered for the M.Phil. (Chemistry) program at Kurukshetra University. I selected the topic for my M.Phil. Dissertation (following discussions with my advisor Prof. Bhatnagar and co-advisor Dr. R.M.P Jaiswal) as: "*Laser Raman Spectroscopy: Calculation of Thermodynamic Properties of a Polyatomic Molecule-Trans Acrylyl Chloride*". I began studying the spectral properties of Trans Acrylyl Chloride using the Laser Raman Spectrometer in our lab alongside my M.Phil. classes. We utilised an IR spectrophotometer to analyse vibrational spectra as part of comparative studies. Accurately calculating thermodynamic quantities relies on having full information about vibrational frequencies and other molecular spectroscopic data. This approach is distinctive and significantly more precise compared to alternative physical methods. Moreover, using vibrational spectroscopy to establish molecular symmetry and confirm the final structure through thermodynamic properties is highly effective and elegant. While the entire procedure remains arduous and challenging, it remains captivating nonetheless. The computations were performed using an advanced computer program acquired from Indiana University. Following the completion of my theory exam, I submitted my M.Phil. dissertation titled "Laser Raman Spectroscopy: Calculation of Thermodynamic Properties of a Polyatomic Molecule-Trans Acrylyl Chloride" to the Controller of Examinations at K.U., Kurukshetra on August 30, 1983. The oral examination for the M.Phil. degree took place on December 16th, 1983. The External Examiner for the

assessment was Professor D.V.S. Jain, who holds the position of Dean in the Faculty of Science at Punjab University in Chandigarh. He is widely recognised as an accomplished physical chemist. I performed successfully in the viva examination and achieved First-Class First position with a Gold Medal when I passed my M.Phil. Exam in Chemistry in 1983. The outcome of my M.Phil. research was documented in a paper that was published in the Journal of Indian Chemical Society. This research paper marked the beginning of my academic journey, which now spans over 120 research papers, the majority of which have been published in well-regarded, peer-reviewed international journals. I sought advice from Dr. R.M.P. Jaiswal and Dr. Krishnan Lal (a Reader in the Department of Chemistry at K.U.) regarding the potential title for my Ph.D. program on January 12, 1984. They proposed the title to be "Spectral and Physico-Chemical Studies of Some Organic Compounds". Prof. Bhatnagar (Advisor) also approved the suggested title. I obtained the Eligibility Certificate for Ph.D. registration on January 23, 1984, and my registration was completed on January 25, 1984.

A fresh initiative had begun. I was delighted to take part in the 'Researchers' Meet, 1984 that occurred on February 7, 1984, at the Senate Hall, Auditorium (Geeta Bhawan), Kurukshetra University. Only a month and a week after enrolling in my Ph.D. program, I had the chance to participate in the "Indo-French Winter School on Laser Physics and Technology" hosted at IIT, New Delhi, from March 5-17, 1984. The expenses included a registration fee of Rs. 100/- and a daily room rent of Rs. 20/-. I lodged at the National Institute of Public Finance and Policy (NIPFP) in New Delhi. It was a superb program. Numerous distinguished experts from leading institutions both domestically and internationally presented talks discussing novel concepts and potential advancements in Laser-assisted science and technology. We, as participants, have the opportunity to gain valuable knowledge. Upon returning from Delhi, I encountered Professor H.L. Bhatnagar, who advised me to begin analyzing the spectra of the glycol series as part of my Ph.D. The glycol compounds in question, which are of spectroscopic grades, were acquired using funds from the project. I, along with Dr. R.K. Jain, a Post-Doctoral Fellow, conducted a Laser Raman Spectra analysis on ethylene glycol, the primary member of the glycol series, within the Laser Research Room at K.U. The outcome was satisfactory. On April 2, 1984, I bought two passport application forms priced at Rs. 2 each for my mentor Prof. H.L. Bhatnagar. He was preparing to participate in the "Symposium on Thermal Degradation" scheduled to take place at the University of Hamburg, which ranks among the top 10 universities and is the second-largest city university in Germany. Professor H.L. Bhatnagar was a well-known physical chemist who focused on studying the thermal breakdown of polymeric materials. He was involved in numerous research endeavours, including projects like the PL480 initiatives

supported by the United States. I had a conversation with Dr. Krishanlal and Dr. R.M.P. Jaiswal regarding the gathering of abstracts and papers. They advised me to go to IIT, New Delhi for further discussion. Between April 6-10, 1984, I spent time at the IIT Delhi campus, where I was able to gather pertinent abstracts and papers from the library. Among the materials I acquired was a paper by E.B. Wilson, originally published in Physical Chemistry in 1941, which is considered a highly valuable reference on the topic of "Molecular Vibrations." I obtained this paper through photocopying services available at the library. I could buy eight books priced at Rs. 250 each from the Soviet and American Book Exhibitions, which took place at Pragati Maidan in New Delhi. Drawing motivation from Prof. H.L. Bhatnagar, Dr. R.M.P. Jaiswal, and Dr. Krishan Lal, along with my determination, effort, and commitment, my research endeavours were advancing smoothly and steadily. One evening, on May 25, 1984, I was summoned to Prof. Bhatnagar's office at 6:30 p.m. This occurred following his trip to the University of Hamburg in Germany. He told me: *"Rajmuhon! It will be great news for you! We have made collaborations with the University of Hamburg. As I have sent many of my research scholars to the USA for post-doctoral work, I would like to send you to the University of Hamburg, Germany after completing your Ph.D. course. You will be the first Indian Scholar to work there on Laser Raman Spectroscopy. We had discussed many cutting-edge research areas including isotopic separation of U^{235} and U^{238} . You can choose any topic. Try to have a strong background in Quantum Statistics, Group Theory and Vibrational Spectroscopy. It will help your career in the future"*. On that particular day, I experienced immense happiness as I started envisioning a promising future for my career. Internally, tears of joy welled up within me. I am deeply grateful to the divine for bringing my talented and capable mentor into my life. Truly, Prof. H.L. Bhatnagar served as my genuine source of inspiration, and I looked up to him as a role model. He gained prominence at Kurukshetra University due to his exceptional leadership and administrative skills. I consider myself fortunate to be one of the scholars who had the opportunity to work under such an outstanding supervisor. With the aspiration of pursuing a Postdoctoral position at the University of Hamburg in Germany, I dedicated myself to conducting research tirelessly to finish my Ph.D. as soon as possible. There were occasions when I had to forgo meals such as lunch and dinner due to demanding laboratory work. Often, I would return home as late as 1 a.m. after long hours spent in the lab. I recalled the words of Joel A. Barker, a renowned motivator, who once remarked: *"Vision without action is merely a dream. Action without vision is just past the time. Vision with action can change the world"*. On the morning of June 21, 1984, at around 8:30 a.m., following my breakfast, I headed to our Laser Raman Spectroscopy Laboratory to capture spectra of the glycol series. To my surprise,

I encountered difficulty in opening the laboratory door. I went to Prof. Bhatnagar's quarter and I asked: "Sir I cannot open the door of the Laboratory". Prof. Bhatnagar said: "I locked it yesterday by changing another lock. From today I shall not allow your Co-Guide Dr. Jaiswal to enter the Lab". I inquired, "What is the reason, Sir?" He replied "I shall not tell you the reason. But it is quite unfortunate for you. Instead of Dr. Jaiswal your teacher Dr. Krishnan Lal will now be your Co-Guide. You should not take any help from Dr. Jaiswal. We have to seek any other researcher within the country who is working on Laser Raman Spectroscopy". I was extremely surprised by this news. It felt as though a sudden jolt of lightning had struck me. I never expected that my mentor Prof. Bhatnagar would express such thoughts. Now I realize that life has its ups and downs. Not every path leads to success. I felt quite disillusioned. I went to meet Dr. Jaiswal and asked: "Sir, whether it is true what Prof. Bhatnagar says? Why it is so?" Prof. Jaiswal was quite mum for some time and then he slowly said: "Rajmuhon! I love you very much as a student as well as a younger brother. I thought you were one of my best students. That's why I handed over my Physics Laboratory key to you in addition to the key to the Laser Raman Spectroscopy Laboratory of the Project. And now! I shall not be able to help you. Your Guide Prof. Bhatnagar will not allow me to enter the Laser Raman Lab. I am so sorry?" Then I asked him "Sir, what is the reason?" He replied "Rajmuhon! That I can't tell you!" I felt bewildered and exasperated, overwhelmed by loneliness and indecision. Prof. Bhatnagar and Dr. Krishan Lal offered me comfort and guidance during this challenging time. They said: "Rajmuhon! At least we have to know thoroughly about the computer program that we had purchased from Indiana University- how to calculate the vibrational frequencies..... Other parts, of course, we can manage. Would you like to visit the departments of Physics and Chemistry of the nearby universities/institutes like Punjab University, Delhi University, IIT, Delhi or other premier Institutes including IITs, IISc., etc..... to find anybody else who is working on Laser Raman Spectroscopy. If you are having the willingness, we will write to the HODs. We shall also try to find out....". Previously, my sole support in this matter was Dr. R.M.P. Jaiswal, who proved to be the most dependable individual. Despite Prof. H.L. Bhatnagar and Dr. Krishan Lal's considerable expertise in the thermal degradation of polymeric compounds, their understanding of Laser Raman Spectroscopy, computer programming, and spectral calculations was limited. I visited Punjab University, Delhi University, IIT Delhi, and other institutions based on formal letters from Prof. H.L. Bhatnagar in search of Professors/Researchers, but unfortunately, my efforts were unsuccessful. Upon my return, I encountered Dr. R.M.P. Jaiswal alone in his residence on the campus on July 23, 1984 and narrated everything. I asked him "Sir, without your help, I may not be able to complete my

Ph.D. work. Should I leave my research work?" Then he replied "No Rajmuhon! Let's do it like this. Don't tell this to Prof. H.L. Bhatnagar. I had a Ph.D. scholar who was the first person in my lab to work on Raman Spectroscopy. He is Dr. P.P. Garg who joined the Dept. of Physics, Devi Ahlia University, Indore, after finishing Ph.D. Course. He will be able to explain to you nicely what you want to know". I experienced great joy and felt a renewed sense of optimism. I told my guide Prof. H.L. Bhatnagar: "Sir, I could get one teacher at Devi Ahlia University, Indore who works on Raman Spectroscopy. I want to consult him". Prof. H.L. Bhatnagar was kind enough and said: "O.K. you go. Whatever expenditure is required will be made from the project fund". I went to Indore where I encountered Dr. P.P. Garg on August 2, 1984. He exhibited great generosity. I discussed my issues with him and he said: "Rajmuhon! Yes, I can help you in that regard. However, one problem is that we may not get the slots for computers in the daytime. Ours is the only computer where most of the computer works are done. Even for Municipality works also it is done here only. Will you be able to work during 2. A.M. to 4. A.M. in the nighttime. Then I can book the slot for this duration...". I replied: "Yes, please book that slot". We worked together for 15 days during which he provided excellent instruction, enabling me to proficiently operate the computer program and analyse data with confidence. All financial matters were settled satisfactorily. I expressed my deep gratitude towards him. He escorted me to the Railway Station on August 18, 1984. I had the pleasure of meeting Prof. H.L. Bhatnagar and Dr. Krishan Lal on August 25, 1984, and shared details about my progress with them. They were extremely pleased with my work. Additionally, I met with Dr. R.M.P. Jaiswal individually and expressed my gratitude for his generous assistance. After a considerable period, I decided to return to my homeland. On September 7, 1984, I departed from Kurukshetra by train at 8 a.m., accompanied by Y. Babuyaima and Ksh. Biswamitra. Upon arriving in New Delhi, we went shopping at Palika Bazar. Later that day, we departed Delhi aboard the Tinsukia mail train bound for Guwahati at 6 p.m. During the train journey, I immersed myself in reading "ABC of Quantum Mechanics". We arrived in Guwahati on September 9, 1984. The following day, we flew to Manipur (the flight fare from Guwahati to Imphal was Rs. 95/=, and with a student discount, we paid Rs. 48/=). Meeting my family members, relatives, and friends brought me great joy. The day after that, I had the pleasure of reuniting with my maternal uncle Ibohal, maternal aunt Kamalani, and brother-in-law Raghmani. On September 17, 1984, I visited the Department of Chemistry at Manipur University for the inaugural meeting with Prof. I.S. Khaidem. Prof. I.S. Khaidem asked me: "Rajmuhon, what are you doing now?" I replied, "I have completed my M.Sc. and M.Phil. courses from Kurukshetra University. Now, my research work is going on for my Ph.D.

degree". He proceeded "In which area you are working?" I responded, "Both my M.Phil. and Ph.D. works are on Laser Raman Spectroscopy". He expressed "Oh! Spectroscopy. Very Good". Based on the recommendation of Prof. I.S. Khaidem, I delivered a presentation on "Laser Raman Spectroscopy" at the Chemistry Department of M.U. on September 18th, 1984. Additionally, I conducted lectures on spectroscopy for approximately one week. Meanwhile, my parents proposed prioritizing family life. I got married to M. Mema Devi on 28th September 1984, marking the beginning of a new chapter. The wedding was conducted traditionally and modestly, with our family spending just Rs. 13,000. On October 22, 1984, I departed from my family to resume my research work at Kurukshetra University. I continued working there until November 12, 1984, experiencing the emotional hardship of being away from my loved ones. On November 14, 1984, I departed from Kurukshetra for Manipur once more. Five days later, on November 19, 1984, I visited M.U. with the purpose of meeting Prof. I.S. Khaidem. During our meeting, Prof. Khaidem advised me to continue giving lectures. As per his suggestion, I conducted classes for both M.Sc. Previous and M.Sc. Final courses, cover topics such as Chemical Kinetics, Spectroscopy, Statistical Thermodynamics, and a section of Quantum Chemistry. On February 13, 1985, I departed from Manipur to Kurukshetra through Calcutta. In March 1985, accompanied by my guide Prof. Bhatnagar and Dr. R.K. Jain (Research Associate), we travelled to the UGC Office in New Delhi by hiring a car. We presented the progress report of our project to the UGC and Prof. H.L. Bhatnagar requested the UGC Chairman to approve a budget of Rs. 10,000 for our computational tasks. This request was later granted. Prof. Bhatnagar introduced me to the UGC Chairman as he was a close acquaintance of the Chairman at that time. On April 20, 1985, I was able to obtain one letter along with the application form for the position of Assistant Professor in the Chemistry Department at M.U. It was recommended that I include two referees (for evaluation reports) from my Guide and Co-Guide. I submitted the application form on schedule, having sought permission from them beforehand. However, during this time, I encountered several challenges: (1) errors in computational work, and (2) a malfunction in the PMT power supply. Moreover, a misunderstanding between my Guide Prof. Bhatnagar and former co-guide Dr. R.M.P. Jaiswal significantly impacted my ongoing research. This situation left me feeling quite frustrated.

I eventually received a call letter from the Registrar at M.U. for an interview for the Assistant Professor position. The day before leaving Kurukshetra, I visited my guide Prof. Bhatnagar's residence. We were served breakfast by his wife (aunty), and afterwards, I sought their blessings by bowing down to Prof. Bhatnagar and aunty. This emotional moment brought tears

to my eyes, and the same sentiment was shared by both of them. I still vividly remember that poignant scene of our impending separation.

Likewise, I sought blessings from Dr. Krishan Lal and Dr. R.M.P. Jaiswal separately. I also had tea with my friends and colleagues at the University Canteen, including senior colleagues Dr. R.K. Jain, Ramchandra Rao, and Venkata Rao, as well as colleagues R.K. Gupta, Anjaneyulu, Jadav, and others. They all extended their best wishes for my future endeavours. That evening, I found it impossible to fall asleep... The nearly five years I spent at Kurukshetra University brought back vivid memories... Educational trips to places like Bhakra Nangal Dam, Mussoorie Hill City, Forestry Institute in Dehradun, Rishikesh, Triveni Sangam, Taj Mahal, as well as cultural sites such as Brahma Sarovar and Bhishma Kunda, were unforgettable. Friendly football matches between Manipuri students and friends from Nigeria and Afghanistan, along with the various sports, cultural events, and activities organized by the Manipuri Students' Association, Kurukshetra (MASAK), were also highlights. I served as the General Secretary while Ojha H. Madhusudan was the President of MASAK during that time.

Teaching, Research and Administration at Manipur University (1985-2021)

On May 21, 1985, I left Kurukshetra University for Manipur. I went to Delhi by bus and then from Delhi to Imphal by Air India. The route is Delhi-Patna-Baghdora-Gauhati-Imphal. I reached Imphal by 3:15 p.m. and then home by 5:15 p.m. I faced the interview for the position of Assistant Professor of the Dept. of Chemistry, M.U. I had done well. Chairman was Prof. Mahale, Hon'ble Vice-Chancellor, M.U. I was appointed as a Research Associate. I sent my Resignation letter from JRF to the Principal Investigator of the Laser Raman Spectroscopy Project (July 5, 1985). On July 8, 1985, I joined the Department of Chemistry, M.U. as a Research Associate with a pay scale of 700-40-1100-50-1600 per month. Later on, it was redesignated as Associate Fellow (October 4, 1985) and finally as Assistant Professor. On July 22, 1985, I started taking an MSc. Classes on the topics of Spectroscopy, Statistical Thermodynamics and Electrochemistry.

In the meantime, I thought about registering for my Ph.D. course. However, the faculty members from the Physical Chemistry specialisation were not willing to become my Guide. So, I approached Ojha Manihar (Inorganic specialisation) to become my Guide. He was kind enough to accept my proposal. After a long discussion with Ojha Manihar, he suggested the topic of my Ph.D. work as "*Outer Sphere Ion-Association of Metal (III) Complexes*" (that

was on August 1, 1985). On October 6, 1985, my Ph.D. Registration was done. On the same day, our first daughter, “Nongmaithem Leindah Devi”, was born. I assumed October 6 was a fortunate day for our family.

In spite of heavy schedules/work of teaching, Examination and family burdens, I concentrated more on my research work. Sundays, holidays, and other festivals, I was always in the laboratory, day and night. I could complete my Ph.D. work in the year 1990 (Degree awarded by M.U.).

I have more than 120 research papers which have been published mainly in reputed international journals: Journal of Physical Chemistry (American Chemical Society)-2 numbers; ACS Omega (American Chemical Society)-1; Inorganic Chemistry (American Chemical Society)-1; Journal of Chemical Society, Dalton Transactions (Royal Society of Chemistry)-1; RSC Advance (Royal Society of Chemistry)-1; New Journal of Chemistry (Royal Society of Chemistry)-2; Colloids and Surface A: Physico-chemical Engineering Aspects (Elsevier)-1; Colloids and Polymer Science (Springer)-2; Materials Science and Engineering B (Elsevier)-1; Journal of Rare Earths (Elsevier)-2; Journals of Alloys and Compounds (Elsevier)-3; Ceramic International (Elsevier)-1; Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy (Elsevier)-15; Journal of Environmental Chemical Engineering (Elsevier)-1; Journal of Luminescence (Elsevier)-3; Arabian Journal of Chemistry (Elsevier)-1; Brazilian Journal of Chemical Engineering (Elsevier)-1; Optik (Elsevier)-2; Journal of Material Science: Materials in Electronic (Springer)-1; Arabian Journal of Science and Engineering (Springer)-1; International Nano Letter (Springer)-1; Environmental Science and Pollution Research (Springer)-1; Journal of Environmental Geology (Springer)-1; Nano and Nano Letter (IET)-1; Journal of Applied Physics (American Institute of Physics)-1; Reactive and Functional Polymers (Elsevier)-1; European Journal of Inorganic Chemistry (Wiley)-1; European Journal of Sustainable Development (European Centre of Sustainable Development)-1; Journal of Solid State Chemistry (Elsevier)-1; Journal of Chemical Sciences (Springer)-1; Inorganic Chemistry Communications (Elsevier)-2, RSC Applied Interface (Royal Society of Chemistry)-1; etc. to select a few.

19 Research Scholars have been awarded Ph.D. Degree under my direct supervision and nine under Co-Supervision, eight students got M.Phil. degree under my guidance. I also supervised more than 50 M.Sc. students for their dissertations/projects. My areas of research interest are Spectral Analysis of 4f-4f Transitions; Synthesis, Characterization and Luminescence Properties of Lanthanides Doped Nanomaterials; Nanocomposites for Hyperthermia applications; Laser Raman Spectroscopy; Arsenic Contamination in Tube-Wells of Manipur;

Air and Water Pollution; Biodiversity Conservation, Climate Change: Vulnerability and Risk Assessment; Medicinal Plants and Fermented Bamboo Shoots (Trace element analysis using EDXRF and Nuclear Techniques like PIXE) etc.

I had trained (worked with) 7 Junior Research Fellows, 2 Senior Research Fellows, 6 Post-Doctoral Research Fellows (1 as Pool Scientist, 4 Research Associates and 1 Woman Scientist) under major research projects sponsored by UGC, DST, DST-SPLICE CELL, DBT, CSIR, MoEF, AYUSH, BRNS (BARC) and DAE-UGC Consortium, etc. So far, I had completed 13 major research projects.

Many of my Research Scholars and Post-Doctoral Fellows/Research Associates got placements in premier institutions including NIT, Manipur University, Mizoram University, Berhampur University, Dhanamanjuri University, Govt. Colleges, etc.

During my 35+ years of teaching and research at Manipur University, I participated in and presented many research papers (21 International, 115 National, 7 Regional and 50+ State) including:

- Key-Note Address during “4th International Conference on Natural Resource Management and Sustainability”, held at Udayana University, Bali, Indonesia, from November 26-30, 2023.
- Key-Note Address during the 14th ITHC International Tourism Conference on “Crisis Management and Sustainability in Tourism and Hospitality Industry” held at Sainte Marie De Chavagnes, Cannes, France, from September 19-23, 2023.
- Key-Note Address during “The International Conference on Food Engineering and Biotechnology: held at First Hotel, Bangkok, Thailand during May 6-28, 2011.
- Presentation of the paper entitled “Luminescence properties of reversible Tb³⁺ doped GdPO₄ nanoparticles prepared by an ethylene glycol route” during the 7th International Conference on f-Elements” held at Koln University, Germany during August 23-27, 2009.
- Presentation of the paper “Absorption spectral studies of 4f-4f transitions for the complexation of Pr (III) and Nd (III) with glutathione....” during the “6th International Conference on f-Elements” held at Wroclaw University, Poland, during September 4-9, 2006, etc.

I had involved (mostly as convener) in the organization of 33 Conference/Seminar/ Workshop/ Refresher Course and also delivered ~50 lectures. I was a peer reviewer of Journal of Material Science (Springer), Journal of Luminescence (Elsevier), Journal of Solid-State Chemistry (Elsevier), Inorganic Chemistry Communications (Elsevier), etc.

Special Thanks from ACS OMEGA

I was so happy to receive a special thanks from ACS OMEGA (on February 17, 2020). It goes like this.

Thank You, Prof. Singh!

Your contribution as an author publishing in ACS OMEGA helped make 2019 another record-breaking year for the journal. On behalf of the ACS OMEGA editorial team, we wish you a very happy new year and gratefully acknowledge your contributions to the journal's success.

We also invite you to continue submitting manuscripts.....

Thank you again!

Sincerely,

ACS OMEGA Co-Editors

Prof. Deqing Zhang & Prof. Krisha Ganesh.

Services Rendered to Manipur University (University administration)

Dean, School of Mathematical and Physical Sciences, 2017-2019; Dean of Students' Welfare Manipur University, 2001-2004; Head, Department of Chemistry, Manipur University, 2005-2007; Member of Syndicate (2001-2007), Senate (2001-2007), Court (2005-2007), Board of Studies, Academic Council etc., Deputy Co-Ordinator, UGC-SAP, Department of Chemistry, Manipur University, 2009-2014; Chairman, Examination Committee, Both Undergraduate Courses, 2018-2019, and Post Postgraduate Courses, 2019, and Chairman, Library Committee, 2019-2020, etc.

Other Services:

Member of Sub-Committee, State Level Task Force, Department of Higher and Technical Education, Government of Manipur, 2020; Nominated Member (nominated by MHRD, Government of India) of ERC, NCTE, Bhubaneswar (2019-2022); Chairman, State Level Environmental Impact Assessment Authority (nominated by MoEFCC, Government of India), (2018-2021); and Member, Manipur State Higher Education Council, (2018-till date); Member of Selection Committee of UPSC for appointment of Scientists of Premier Institutions; Member of Executive Council, Mizoram University, Mizoram (2022-2025).

Installation of Statues and Obelisk:

As a Dean of students' Welfare at M.U., I was very involved in the installation of the Students' Obelisk (April 4, 2003) and Mahakavi Hijam Anganghal Singh Statue (March 21, 2004) on the campus of Manipur University.

Honours/Award:

- Lifetime Achievement Award 2023 for outstanding contribution in the field of Chemistry, on the occasion of the 4th International Conference on “Natural Resource Management and Sustainability” held at Udayana University, Bali, Indonesia, from November 20 to 30, 2023.
- Award of Honour 2023, on the occasion of the 14th ITHC International Tourism Conference on “Crisis Management & Sustainability in Tourism and Hospitality Industry” held at Sainte Marie De Chavagnes, Cannes, France, on September 19-23, 2023.
- SFE-Special Recognition Award 2023, on the occasion of the 22nd International Congress of International Society for Ethnopharmacology & 10th International Congress of International Society for Ethnopharmacology, held at City Convention, Imphal during February 24-26, 2023.
- AYUSH EXCELLENCE AWARD 2022, (Ayurveda Parv) Vinoba Seva Pratisthan, supported by AYUSH.
- UGC Basic Science Research (BRS) Fellow, 2021 (could not join due to new assignment of Vice-Chancellorship of Dhanamanjuri University)
- Yambem Mani Sahitya Award 2021 (For my book “Marie Curie” in Manipuri Version)
- Bharath Shiksha Rathna Awards, 2021 (Best Leadership Award)
- Wangkheirakpam Gautam Memorial Award 2020 (Best Science Writer)
- State Science Communicator Award, 2016 and Best Science Writer
- Certificate of Appreciation, 2013, for Engendering a Strong Environmental Conscience
- Naorem Amuba Singh Teacher Award 2010
- Letter of Appreciation Award, 2006 for Invaluable Contribution in Strengthening and Upkeeping the Objectives of the National Childrens' Science Congress, DST and NCSTC-Network, Govt. of India, New Delhi.
- Junior Research Fellowship (UGC LASER SCHEME), 1983-1985
- First Class First in M.Phil. Exam, Kurukshetra University, 1983

Membership of Professional Bodies/Societies:

Life membership of Societies, including

- Member of American Chemical Society, USA.

- Theoretical Chemical Physics, USA.
- Association of Chemistry Teachers, India (ACT).
- Indian Society for Radiation & Photochemical Science (BARC), c/o Homi Bhabha Centre for Science Education, TIFR, Mumbai.
- Indian Association of Nuclear Chemists and Applied Sciences (IANCAS), BARC, Mumbai.
- Society for Materials Chemistry, c/o Chemical Division, BARC.
- Member (Link Person) of World Class Accelerator Facility Centre at Cotton University for N.E. Universities (yet to come).

Unique Invitations from Premier Institutions

Based on my research publications, many invitations (>10) came from premier institutions within the country and abroad to give Key-Note Address/Lead Speaker. Few of them are

- Lead Speaker at “Global Meeting on Material Science and Nanotechnology” with a theme “Effect of Smart Material Science in Our Daily Life and Its Advancement”, December 11-12, 2017 at Dubai, UAE.
- Lead Speaker at “Innovation Material Science and Technology Conference” during July 9-11, 2018, Valencia, Spain.
- Invited Lecture at “15th International Hydrocolloids Conference” March 12-15, 2020, in Melbourne, Australia.
- To present a paper on Material Chemistry/Physical Chemistry in the “6th International Conference on New Trends in Chemistry”, April 16-18, 2020, Kyrenia, North Cyprus.
- To present our paper “Photoluminescence properties of Eu³⁺ doped BaF₂ nanomaterials for hyperthermia application” at the 7th Global Conference on Polymer and Composite Materials (PCM 2020), July 12-15, 2020 at Xian, China.
- Key Speakers at “International Conference on Innovative Applied Energy (IAPE 2020), September 15-16, 2020, Cambridge City, United Kingdom.
- Invited Lecture at “3rd Biennial International Conference on Bioresource Technology for Biology, Bioproducts & Environment Sustainability”, September 20-23, 2020 at Lake Garda, Italy.
- Honourable Speaker at the 2nd World Conference on Laser, Optic Science & Photonics (LSP 2021), April 15-17, 2021 at Prague Czech Republic.

Similarly, many more came from Australia, Brazil, France, etc. In spite of receiving such unique invitations from different countries and thereby getting the golden opportunity to interact with renowned scholars, I had to lose the chance. This was because of the turmoil at Manipur University due to the Ex-V.C. Prof. A.P. Pandey issue and the COVID-19 pandemic case. Processing for going abroad in time was not possible. I was so disappointed. However, for academic purposes I could visit Poland, Germany, France, Monaco, Austria, Switzerland, Thailand, Indonesia and Bangladesh.

Special Lectures

- Delivered a Special National Science Day Lecture on “C.V. Raman and National Science Day” on February 28, 2021, organized by UM-DAE Centre for Excellence in Basic Sciences, Mumbai.
- Presented a speech (as Guest of Honour & Key Speaker) during the 2nd National Summit on “Leadership in Positivity & Positivity Gems of India Award, 2022” on November 18, 2022, at Civil Services Officers’ Institute, Vinay Marg, Chanakyapuri, New Delhi in the Presence of Former President Kovind (Chief-Guest), Indian Army Chief General Manoj Mukund Naravane, Navy Chief Admiral R. Hari Kumar, UGC Chairman M. Jagadesh Kumar and Dr. D. Mulay, Passport Man of India & People’s Ambassador (Former Ambassador of 5 countries)
- Presented the Presidential Speech during the Inaugural Session of North East Sanstha, Delhi’s National Seminar on “Development Perspectives of North East Bharat” on February 18, 2024 at Constitution Club of India, Rafi Marg, New Delhi, in the presence of Chief Guest, Shri Sarbananda Sonowal, Hon’ble Union Minister of Ports, Shipping and Waterways & Minister of AYUSH (unfortunately in the last moment Hon’ble Union Minister could not turn up because of All India BJP Meeting held at Delhi on the same day); Guest of Honour Shri S. Gurumurthy, Eminent Economist & Nationalist Thinker and Key-Note Speaker Prof. Anil Sahashrabudde, Chairman, National Educational Tech. Forum Ministry of Education, Govt. of India.

Project Collaborators

- Prof Narayan Kalkura, Crystal Growth Centre, Anna University, Chennai (DBT Project)
- Prof. M. Indira Devi, Department of Chemistry, Nagaland University (DST project).
- Prof. N. Mohondas Singh, Department of Chemistry, Mizoram University (DBT-Twinning Project)

- Dr. Ksh. Birla Singh, Department of Zoology, Pachunga University College, Mizoram University (now in Manipur University) (DBT-Twinning Project)
- Prof. T. Bora, Toxicological Division, NEIST, Jorhat, Assam (DBT-Project)
- Prof. J.P. Tamang, Sikkim University (DBT-Project)
- Dr. K. Jeyaram, Micro-Biology Division, IBSD, Imphal (DBT-project)
- Dr. H. Birkumar Singh, NEIST (CSIR), Lamphelpat (Ayush-Project)
- Dr. N. Yaiphaba, Department of Chemistry, DM College of Science, DMU (now in MU), Imphal (BRNS-Project)

Academic Interactions and Referees for Research Works/Publications:

Referees:

- Jean-CLAUDE G. Bunzli, Laboratory of Lanthanide Supramolecular Chemistry, Ecole Polytechnique Federale de Lausanne, Switzerland.
- M. Bettinelli, DST, Verona, Str. Le Grazie 15, 37134. Verona, Italy.
- David Parker, Department of Chemistry, Durham University, South Road, Durham DH1 3LE, UK.
- Michael F. Reid, Department of Physics and Astronomy and MacDiarmid Institute of Advanced Materials and Nanotechnology, University of Canterbury, Christchurch, New Zealand.
- O. L. Malta, Department de Quimica Fundamental-CCEN-UFPE. Cidade Universitaria, Recife-PE-50670-901, Brazil.
- Prof. Tarasangkar Pal, Department of Chemistry, IIT, Kharagpur, West Bengal.
- Prof. P. K. Das, Department of Physical and Inorganic Chemistry, Indian Institute of Science, Bangalore.



With Prof. Betani (Italy)



With Prof. Dong and his group (China)



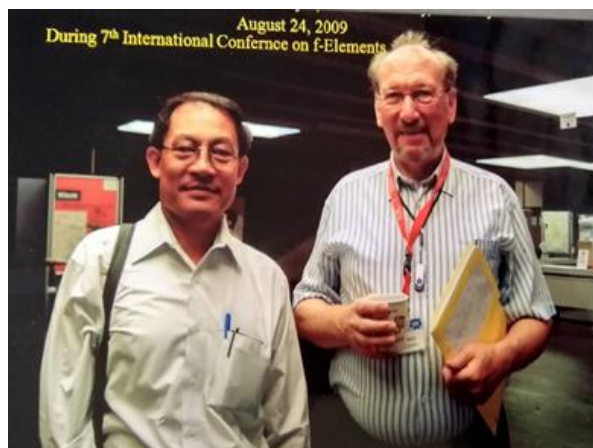
With Prof. David Parker (UK)



With Prof. J.C.G. Bunzli (Switzerland)



With Prof. William J. Evans (USA) & Pantenburg (Germany)



With Prof. Gerd Meyer (Germany)

Academic Interactions (Joint research works)

- Prof. Dipankar Chakraborty, Dean, School of Environmental Science, Jadavpur University.
- Dr. Anandita Chakraborty (Biologist) DAE-UGC Consortium, Salt Lake, Kolkata.
- Dr. M. Sudarshan (Physicist), DAE-UGC Consortium, Salt Lake, Kolkata.
- Dr. Raghmani Ningthoujam, Chemistry Division, BARC, Mumbai
- Dr. R.K. Vatsa, Chemistry Division, BARC, Mumbai
- Dr. Joseph Daisy, Physics Division, BARC, Mumbai.
- Prof. A.K. Manihar Singh, Department of Chemistry, Manipur University, Imphal

- Prof. S.K. Srivastava, Department of Chemistry, MU (the then VC NEHU).
- Prof. N. Rajen Singh, Department of Chemistry, Manipur University, Imphal
- Dr. Th. David, Department of Chemistry, NIT, Imphal
- Dr. N. Yaiphaba Department of Chemistry, D.M. College of Science, D.M.U, Imphal
- Dr. Francis AS Chipem, Department of Chemistry, Manipur University, Imphal
- Prof. Abhik Gupta, Dean, School of Ecology and Environmental Science, Assam University.
- Dr. Susmita Gupta, Ecology and Environmental Science, Assam University.

Popularisation of science

I have been taking a keen interest in the popularisation of science. I was the founder and president of the Manipur Association for the Promotion of Science (MAPS), which was established in 1993. In the beginning, three, Dr N. Nimai Singh and Dr Debananda Ningthoujam, had discussed a lot before founding MAPS. During the formation stage, we were very much inspired by the words of Prof. Abdus Salam (found in one paper). He said: “I was unable to sleep that night of August 14, 1947. From tomorrow, India and Pakistan will be separated. I was confused to choose either Physics or Pakistan Conditionally, I had to choose Pakistan....”

Before leaving Pakistan, he said:

“My dear brothers and sisters of Newly Formed Pakistan! Please don’t follow me. Please try to sow a seed of science in our virgin soil. I will spray them from a far distance!”

Abdus Salam shared the Nobel Physics Prize (1979) with Sheldon Glashow and Steven Weinberg for their contributions to the theory of the unified, weak and electromagnetic interaction between elementary particles, including, inter alia, the prediction of the weak neutral current. He founded the International Centre for Theoretical Physics (ICTP) in Trieste, Italy. I personally wrote one letter to Prof. Abdus Salam, Director of ICTP, seeking some suggestions for our MAPS and also requesting that you kindly send information on ICTP from time to time. He was kind enough to reply to my letter. He inspired us and wished us all the best for the future development of MAPS. He also sent me a form to fill out for inclusion of MAPS in the mailing list of ICTP. That was done. Many occasional publications, such as the annual academic calendar of ICTP, etc., have been sent to us. MAPS’ activities included Observations of National Science Day, World Environment Day, International Wetlands Dy, World Ozone Day, etc. In addition to this, we organized inspirational talk programmes in

schools and colleges in the state. Through this programme, we could meet many budding science students. To name a few:

- **Laishram Shanta** (at JNV Navodaya, Kakching): Who could receive the best thesis award from TIFR, Mumbai and now Professor & Head, Dept. of Mathematics, ISI, New Delhi.
- **Raghu Ningthoujam** (met at Thanga when he was in class VIII)- now ISRO Scientist who is involved in Chandrayan Mission of India
- **Ningthoujam Raghumani** (whom we met during college life in Thoubal)- is now one of the best scientists in the Chemistry Division of BARC, Mumbai. He is the first Manipuri who has been awarded Fellow of the National Academy of Science (FNASC)
- **Chandrakanta Aribam** (from Pishum: when he was in class XII). He also could receive the best thesis award from TIFR, Mumbai. He is now at Dept. of Mathematics, IISER, Mohali, Punjab, etc.

MAPS also introduced the Manipuri diaspora (Scientists) in the Peoples' Science Network (PSN) & in the media. To name a few:

- **Dr. Manoharmayum Jayanta**, Wrangler Awardee Mathematician, now in Sheffield University, UK
- **Dr. Thockchom Birendra Singh**, Organic Solar Cell Scientist and Physicist, is now in Australia
- **Dr. Amom Ruhikanta Meetei**, a Renowned Biochemist, is now in Children's Hospital and Research Centre, Cincinnati, Ohio, USA, etc.

MAPS also had a felicitation of Veteran Scientists of Manipur. So far, we had felicitated 13 Manipuri scientists: Dr. L. Nanda Babu Roy (Medicine), Prof. K. Rajen Singh (Mathematics), Shri Haobam Angangyaima Singh (Engineer), Shri Khuraijam Dhiren Singh (Agriculture), Dr. O. Kumar Singh (Anthropologist), Shri G. Tomba Sharma (Popular Science Writer), Prof. Haobam Devendra Singh (Biochemist), Dr. W. Motilal Singh (Medicine, Neurologist), Dr. Ng. Brajachand Singh (Medicine, Microbiologist), Prof. I.S. Khaidem (Chemist), Prof. C. Amuba Singh (Physicist), Prof. Nandakumar Sharma (Physicist) and Prof. A. Surjalal Sharma (Astrophysicist).

MAPS is also a partner for organizing Science Meet with MASTEC, MASS, STF, MASCA and GENIM, which started in 1997. Since the inception of "Science Meet," I have been Chairman of the Quiz Competition.

We also founded the Research Institute of Science and Technology (RIST) in 2010 at Imphal. RIST acknowledges the contribution of the following speakers (selected ones) who have delivered lectures during the RIST Popular Talk Series since 2014, Prof. A. Surjalal Sharma, Maryland University, USA; Dr. Priyadarshini Thiyam, KTH Royal Institute of Technology, Stockholm, Sweden; Dr. Prim Gangmei, School of Physics, University of Exeter, UK; Dr. N. Chandrachani, Observatorio Nacional, Rio de Janeiro, Brazil; Dr. Satyendra Thoudam, Department of Physics and Electrical Engineering, Linneuniversitetet, Sweden; Dr. Augustine Kshetrimayum, Institute of Physics, Johannes Gutenberg University, Germany; Dr. Raju Laishram, Imperial College, London; Dr. Guneshwar Thangjam, Max-Planck Institute of Solar System Research, Gottingen, Germany; Dr. Joykumar Thokchom, Johnson Battery Technologies, Atlanta, USA; etc.

So far, more than 60 Manipuri Scientists have delivered lectures in the RIST Popular Lecture Series.

I also mentored/guided school students who had participated in the National Science Seminar Competitions. Following are some of the students who could get 2nd positions in the National Science Seminar: **Parikshit Thoudam**, Sainik School, Imphal (now an IAS Officer); **Miranda Thoudam**, a lone girl student of Sainik School (who visited Madam Curie's Radium Institute, Poland); **Priyasundari Heisnam**, Nirmalabas School (who visited Seoul National University, South Korea); **Sovenetri Naorem**, P.R. English School, Kakching

I am also a consultant to many students who aspire to appear in examinations such as NEET, KVPY, IIT, IISER, etc.

Social Contributions

I have been taking a keen interest in the production of films related to academics. My film "Orchids of North East India" has been telecasted many times in DDK programmes. I was involved in making the TERI's film "Black to Roots", which had been telecasted on the National Geographic Channel. For the production of films for AVRC (now EMMRC), Manipur University, many episodes of orchids had been made from my orchid garden. I was also a consultant for the film "E-THIL", written and directed by Manoj Kshetrimayum, which won BEST FLIM in the short fiction film category, 8th cut. in a film festival in 2016 held in Mumbai.

Manipur Shumang Leela Party-Peace Maker Artist Association has been playing 'Madam Curie' as an educational play (since March 2018), which has been translated from my book "Voyage through Rays: Life and Works of Madam Curie" by creative writer Ranjit Ningthouja. 13 episodes of the same "Madam Curie" had been broadcasted in AIR, Imphal recently. Four

episodes of Quantum Revolution, Computer Revolution, Biological Revolution and Nano Science & Nano Technology in the 3rd Millennium (Manipuri Version) were broadcast by AIR Imphal in 2022.

I also take keen interest in environmental issues. As a founder President we had founded "Alliance for Development Alternatives Manipur" (ADAM) (Head office at Kakching). Again, ADAM had developed Angaan-ching Eco-Park where more than 300 medicinal and aromatic plants and also culturally important trees are growing. We have Sunday Eco-Park programmes for the students. We also had established an "Open Library" in the park.

I am a member of the Editorial Board of "Anouba Mangal", a sister publication of ADAM. "ADAM AWARD" (biennial) had been started from the year 2006. The first 'ADAM AWARD' was felicitated to Dr. Kh. Shamungou Singh for his contributions towards the saving of the dancing deer "Sangai."

I am also a founder and Vice-President of the Biodiversity, Ecology and Environment Network (BEE NET), Canchipur. Through BEE NET, we have taken up district-wise plantation programmes. We also organized many conferences, seminars, and workshops on the environment and biodiversity of Manipur. I am also an editorial member of BEE NET-Newsletter.

I participated and presented papers at many National and International Conference/Seminar/Workshops, including the International Conference on Medicinal Plants for Survival of Mankind (IISc., Bangalore, 1998), World Hervo Expo (Bhopal, 2004), etc. Through these Conferences I could interact with/dialogue with many eminent environmentalists like Prof. Pe Sengji (China), Prof. Peter Ravan (Missouri Botanical Garden) USA, Prof. James Hindson (Darwin Initiatives and Field Studies Council, U.K.), Prof. Goslin (Nuclear Physicist & Environmentalist, U.K.), Prof. M.S. Swaminathan (Father of Green Revolution), Prof. Madhav Gadgil (IISc, Bangalore), Prof. Rabindranath (IISc, Bangalore, Climate Change Activist), Vandana Shiva (Physicist& Environmentalist), Sunderlal Bahuguna (Chipko Movement Leader), etc.

Ministry of Environment, Forest and Climate Change, Government of India, New Delhi, nominated me as Chairman of State Level Environmental Impact Assessment Authority for a period of three years (2018-2021). I was involved in the preparation of "State of Environment Report, Manipur (2006) sponsored by the Ministry of Environment & Forest, Govt. of India; Manipur State Action Plan on Climate Change, 2013 (Govt. of Manipur, Directorate of Environment) & Manipur Vision 2030: Leaving No-One Behind Achieving Inclusive Growth and the Sustainable Development Goals. My book "Biodiversity, Biotechnology and

Intellectual Property Rights" was also published by BEE NET Manipur in the year 2007. I completed four major projects (on Environment and Biodiversity) sponsored by AYUSH, MoEF, DST-SPLICE Cell, Govt. of India and Darwin Initiatives & Field Studies Council, U.K.

I am also an Editorial Board Member of "Orient Vision", published by the National Research Centre (NRC), Canchipur. I am the Founder and President of Ojha Sanajaoba Memorial Trust (OSMT) and also a Founder and Member of Ojha Sanajaoba Public Library, Heijugang Bazar, Canchipur. I am also a member of Editorial Advisors of "Alternative Perspectives", - a Biannual Interdisciplinary peer Reviewed Journal (on Culture, History, Economy and Politics) published by the Centre for Alternative Discourse, Manipur. I was also involved in the establishment of the Library and Information Centre, Kakching, where various activities were organised, including the Sunday Special Program, Governor's Award Ceremony, Popular Lecture Series, etc. As a president of the Manipur Association for the Promotion of Science (MAPS), I was involved in the creation of the Manipur Science and Technical Council (MASTEC) and in the establishment of the Institute of Bioresource and Sustainable Development (IBSD), Imphal. I helped Dr. M. Indira Devi, Head, Department of Chemistry, Nagaland University to develop the department during its inception.

One Great Upset

After the interaction of 15 professors with the Selection Committee (at Delhi) for the appointment of Vice-Chancellor of Manipur University (2016), we three were shortlisted. Among the three of us, Prof. A.P. Pandey was appointed, and he took over as Vice-Chancellor of Manipur University on 21 October 2016. After Prof. A.P. Pandey's issue, Shri Jarnail Singh, IAS (Retd) and former Chief Secretary of Manipur served as an Administrator (fully empowered to discharge the functions of the Vice-Chancellor) from 11 October 2018 to 30 November 2020. In the meantime, a fresh advertisement was done for the appointment of Vice-Chancellor of Manipur University. I had applied for this post. During this time, as a dean of the School of Mathematical and Physical Sciences, I tried my best to improve the administration of Manipur University. Not only administration, but my research activities also could reach the pinnacle. I had a great hope. Unfortunately, I could not receive the call letter for interaction. This time, only one professor from the M.U. campus was given the call letter for interaction for the appointment of the Vice-Chancellor. I was very disappointed. That time, I was consoled by the words of Thomas J. Watson (founder of IBM): *"If you want to be successful, then double your rate of failure. Success lies on the far side of failure"*.

During My Stay at Dhanamanjuri University (2021-2024)

I joined Dhanamanjuri University (D.M. University) as a First Regular Vice-Chancellor on April 28, 2021. Dhanamanjuri University was established on April 6, 2018, under “The Dhanamanjuri University Act, 2017” through a notification in the Manipur Gazette published by the Department of Higher and Technical Education, Government of Manipur. Dhanamanjuri University is a long-cherished dream of our founding fathers and Maharani Dhanamanjuri, the mother spirit in the birth of this seat of learning. The University, under the National Scheme of Rashtriya Uchchar Shiksha Abhiyan (RUSA), is constituted of five constituent colleges, namely, Dhanamanjuri College of Science, Dhanamanjuri College of Arts, Dhanamanjuri College of Commerce, Ghanapriya Women’s College and Lairenmayum Sheibyashachi Law College.

My vision for Dhanamanjuri University

My vision for Dhanamanjuri University is to make it a world-class university and educate the youth of the region so as to enable them to participate fully in the development of the nation and become responsible citizens. Moreover, it aims to establish a high-quality Educational Hub of Higher Education: Centre of Human Capital.

Current Problems faced by the University

Since its inception, all the faculty members and non-teaching staff members of the five Constituent Colleges have been sincerely taking a role in teaching-learning processes and other academic and non-academic activities of the University in addition to their normal duties in the colleges. At present, the University offers postgraduate courses in 22 different disciplines. Apart from this, the teachers have again been assigned duties to teach Pre-Ph.D. classes from 2022. Therefore, the workload of teachers has increased tremendously, resulting in a major problem in teaching-learning pedagogy at the University. Moreover, the University is running (official works) with a regular Vice-Chancellor, Ex-Officio Registrar and Ex-Officio Finance Officer. All the ministerial staff (5-6) are purely temporary and engaged ones. The heavy works of the Controller and Deputy Controller of Examinations are also running as in-charges by one Principal and one faculty member. Proper administration and many effective decisions of the University cannot be taken properly due to the absence of regular officers. Moreover, due to the absence of the Regular Controller, Deputy Controller of Examinations and other ministerial staff of the University, the declaration of various Examination results has been hampered. Thus, the careers of thousands of students at the University are at stake. All these have rendered a very pathetic situation in running the university. This has further led to frequent agitations by the students as well as the teaching community, and it has tremendously hampered the progress of the University.

Dhanamanjuri University was recognized under section 2(F) of the UGC Act, 1956 but the recognition of the University under 12(B) of the UGC Act, 1956, is still pending. Without recognition under 12(B), faculty members and the university are not allowed to apply for projects for financial help under UGC. Appointment of Regular Officers (Registrar, Controller of Examinations, Finance Officer, etc.), Staff and Faculty of the University is mandatory to recognise the university under 12(B) of the UGC Act 1956.

Accordingly, the interviews/written tests for appointment of 88 posts of Assistant Professors of 22 departments and 169 non-teaching staff (including Registrar, Deputy Registrar, Assistant Registrars, Controller of Examinations, Deputy Controller of Examinations, Deputy Finance Officer) had been conducted and completed by Selection Boards during September 2021 to June 2022. The University sent the relevant file of interviews/written tests for concurrence from the Departments of Personnel (D.P.), Government of Manipur, for the declarations of the results for teaching and non-teaching staff on June 10, 2022. Soft reminders were also made on February 10, 2023, and July 14, 2023. Unfortunately, the D.P. is still not granting the concurrence, which reflects the state Government's step-motherly treatment of the university. It is a pity and sorry that a university which has completed almost six years of its establishment could not even get recognition under 12 (B) of the UGC ACT, 1956. If it is continued, there is an apprehension that D.M. University may get back-listed. The recruitment results must be declared as soon as possible for the welfare of the university, students, and the state.

Considering the above facts, it is urgent that the government of Manipur take a proactive role and take prompt, necessary remedial measures to ensure the existence of the prestigious State University.

Services Rendered to Dhanamanjuri University (2021-2024)

I faced a tough time during the transition period to this new State University. I had to face many challenges and hurdles in its path of progression. Despite these, the following achievements have been made during the last three years.

(I) Construction/Renovation

The construction of two Library Buildings (G+2), one at D.M. Complex and another at G.P. Women's College, an Administrative Building, a Science Block (including Dhanamanjuri Jubilee Hall), a Social Science Block, a Commerce Block, a Humanity's Building and one Canteen at LMS Law College had been completed and inaugurated on January 6, 2023. These

buildings were constructed under RUSA. Three halls/auditoriums have been renovated at the D.M. College of Arts, D.M. College of Commerce, and D.M. College Central Hall, DMU.

A 100-bed centrally financed MOBC Girls' hostel has been constructed at G.P. Women's College, DMU. The Government of Manipur sanctioned two hostels (100 beds each), one for boys and one for girls, and construction is going on.

The Prime Minister's Development Initiatives for N.E. Region (PM DEVINE) Project of D.M. University has been recommended in principle. The components of this project are: Central Instrumentation Centre, Auditorium with Cafeteria, two Hostels for P.G. gents (100 bedded each) and one Hostel for P.G. ladies (100 bedded), one Language Laboratory, and HRD-UGC Cell (now UGC Malavia Teachers' Training Centre)

The DPR of Infrastructure Developments for the D.M. University (Third Phase) has been made. This project includes the Academic Block of Law College (20 classrooms), the Academic Block of G.P. Women's College (45 classrooms), V.C.'s Quarter, University Guest House, Teachers' Quarter, International Students' Hostel (Boys), International Students' Hostel (Girls), Health Centre, Mini Market Complex, Main Gate, Secondary Gate & Compound Walls, 3000 (three thousand) capacity Examination Hall with Academic Museum, etc.

(II) Faculty Strength/Non-Teaching Staff

(i) On April 26, 2023, the Governor of Manipur was pleased to issue a revised list of 368 teachers holding the posts of Assistant Professors and Associate Professors under the Directorate of University & Higher Education, Govt. of Manipur (as per option submitted by the teachers from all Government Colleges who desires to be transferred to D.M. University under Section 30(i), (ii) of the Statute of D.M. University Act, 2017) out of 387 sanctioned teaching posts bifurcated and transferred to D.M. University from Directorate of University & Higher Education, Manipur.

(ii) A selection list of 83 Assistant Professor posts out of 88 was declared on 29 February 2024 in compliance with the Hon'ble High Court's order, but the issuance of their Offer Forms for joining the posts is still pending.

(iii) 169 Non-Teaching Staff (including the Registrar, Controller of Exams, etc.) will be inducted shortly after the recruitment process is declared (waiting for the D.P.'s concurrence).

(III) Career Advancement Scheme (CAS)

The Career Advancement Scheme (CAS) in Universities/Colleges is an important scheme for promoting faculty members based on their academic achievements. CAS promotion for the teachers of the five constituent colleges of Dhanamanjuri University is a long-pending issue.

Following UGC Regulation 2018, 26 professors, 37 associate professors, and 147 assistant professors (Stage promotions) were promoted under CAS.

(IV) Deans, Schools of Studies, and Dean, Students' Welfare

From the three Schools of Studies, viz., School of Science, School of Social Science and School of Humanities, it has been expanded to seven schools: School of Life Sciences, School of Mathematical and Physical Sciences, School of Human and Environmental Sciences, School of Social Sciences, School of Humanities, School of Commerce and Management Studies and School of Law.

Seven Deans of the School of Studies (Academic Deans) have been appointed. In addition to these, the Dean of Students' Welfare, DMU; the Director of research and Extension, DMU; the Director of the Human Resource Development Cell, DMU; the chairman of the Examination Committee, DMU; and the chairman of the Women's Cell, DMU, etc., have also been appointed.

(V) Dhanamanjuri University Ph.D. regulations, 2022, have been made.

(VI) Ph.D. Guideship to eligible faculty members were given.

(VII) Pre-Ph.D. Course leading to Ph.D. Degrees have been introduced since 2022.

(VIII) The Opening of the 5-Year Integrated Programme of Law (at LMS Law College, DMU), the Department of Biotechnology (at D.M. Science, DMU), the Department of Bioinformatics (at G.P. Women's College, DMU), and the Department of Business Management (at D.M. College, DMU) had been approved by the Syndicate, DMU.

(IX) The Four-Year Programme of Undergraduate Courses under the National Education Policy (NEP 2020) has been implemented since 2022.

(X) Director, College Development Council (CDC), D.M. University had been appointed to discharge the duties of affiliation of Colleges to D.M. University.

(XI) The Director of Sports and Physical Education at DMU has been appointed to look after the AIU sports programmes.

(XII) Dhanamanjuri University's 1st Inter-College Youth Festival (1st DM Unifest) was held from May 16 to 19, 2022.

(XIII) Visit of the NEIPA Team to Dhanamanjuri University was held on October 17-18, 2022

(XIV) The 1st Inter-College Sports of Dhanamanjuri University was held October 20-29, 2022.

(XV) Visit of Chang Jae-Bok, the Republic of Korea Ambassador, to our D.M. University. The Ambassador suggested opening more courses in Korean Studies and suggested collaborative research works.

(XVI) Hon'ble Vice-President of India, Shri Jagdeo Dhankhar, visited our Dhanamanjuri University and had an interaction programme with students and faculty members (May 3, 2003).

(XVII) The legal advisor is appointed to review the university's legal matters.

(XVIII) Ombudsperson of the university, which is mandatory under the UGC guidelines, had been appointed

Conference/ Seminar/ Workshop organised by DMU during 2022-2024 (Selected few)

1. Two-Day National Conference on "Indigenous Culture and Religions in India" (15th IASR Conference) at Dhanamanjuri University during November 8-9, 2022, organised by Indira Gandhi National Tribal University, Regional Campus, Manipur, in collaboration with Dhanamanjuri University and sponsored by Indian Association for the Study of Religion (IASR).
2. One Day National Conference on "Tribal Heroes in India's Freedom Movement" under the Azadi ka Amrit Mahotsav Program of National Commission for Scheduled Tribes, New Delhi, organised by Dhanamanjuri University, Imphal on November 15, 2022.

3. "Seven Days National Workshop for Colleges and Universities on Organic Farming", from December 27, 2022- January 2, 2023, organised by Dhanamanjuri University and sponsored by MOMA, Imphal.
4. International Seminar on "Cultivation of Human Spirit: Confluence of Science and Spirituality" on January 16, 2023, at J.N. Manipur Dance Academy, organised by Dhanamanjuri University in association with University of Bhagavata Culture, Imphal.
5. A Two-Day National Conference on "National Education Policy 2020: Opportunities and the Way Forward" on December 20-21, 2023, at Manipur University Auditorium, jointly organised by Manipur University, Dhanamanjuri University, CAU, IIIT, Manipur, VBUSS, Manipur Chapter.
6. "World Anthropology Post Congress 2023, International Seminar: Anthropology in Practice- Health, Culture & Security" during February 15-17, Manipur University Auditorium, organised by Manipur University in collaboration with Dhanamanjuri University.

Agreement for Academic Collaborations

1. Memorandum of Understanding (MoU) between Dhanamanjuri University, Imphal and University of Science & Technology, Meghalaya.
2. Memorandum of Understanding (MoU) between Dhanamanjuri University, Imphal and Central Agricultural University, Imphal.
3. Memorandum of Understanding (MoU) between Dhanamanjuri University, Imphal and Institute of Company Secretaries of India, New Delhi.
4. Memorandum of Understanding (MoU) between Incubation Centre, Dhanamanjuri University and Sikkim Manipal University.
5. A draft Memorandum of Understanding (MoU) between the National Institute of Technology Manipur (NIT Manipur) and Dhanamanjuri University has been sent for approval from the authority of NIT Manipur.

Pending Cases

1. NAAC accreditation of the five Constituent Colleges and D.M. University.
2. Holding of First Convocation of D.M. University.
3. Recognition of the Dhanamanjuri University under 12 (B) of the UGC Act, 1956.

4. Issuance of offer forms to 83 Assistant Professors, declaration of selection list of Zoology subject and 169 Non-Teaching Staff and Officers of DMU.
5. Upliftment of the Department of Physical Education and Sports Science into the College of Physical Education and Sports Science, DMU.
6. The process for affiliation of all government colleges of Manipur to Dhanamanjuri University.
7. Conversion of Community College: Kaushal Kendra, D.M. College of Science, to Department/College of Entrepreneurship and Skill Development, DMU.
8. A Memorandum of Understanding (MoU) between Dhanamanjuri University and CCRT, Dwarka, New Delhi.
9. A Memorandum of Understanding (MoU) between Dhanamanjuri University and the Institute of Bioresources and Sustainable Development (IBSD) Manipur.