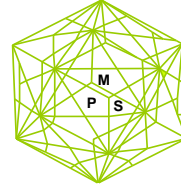


# Pakistan Mathematical Society



**Editors**

**Newsletter**

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## **Editorial**

History bears that societies and academies of sciences have played an important role in the dissemination of scientific knowledge and in cultivating a scientific culture in the world. One of the important organs of these academies and societies is their newsletters. Through these they bring together scientists working in various places and in various areas of scientific research.

Mathematical societies are no exceptions. They have played a similar role in the development of mathematics. But in Pakistan, the community of mathematicians is a small one as compared to the size of its population and in comparison with other branches of science such as chemistry, biology, or physics. Moreover, sailing along the trend and getting impressed by utilitarian slogans in Pakistan vis-à-vis education have harmed the development of mathematics in particular.

Consequently, the nature of mathematics has been grossly misunderstood. Most of the literature that concerns mathematics portrays mainly two orthodox views of mathematics – one, that it is an art and the second, it is a servant of science. These views are so deep-rooted and widespread that they have become a part of our national psyche. It is now difficult to dispel these notions.

There is a desideratum of a comprehensive plan to change the prevailing notion of mathematics and its status. Of course, a couple of hand-picked individuals can draft a policy for ‘improvement’ of mathematics in the country but it will be based on their own natural bias of the subject and meant to meet their immediate vested interests.

The state and status of mathematics cannot be changed overnight. A concerted effort is required by those who care for all this. There is therefore a need to create awareness amongst mathematicians and mobilize them to become a forceful entity. Only then can the voice of the mathematicians be heard effectively and consequently a viable, long-term, and comprehensive policy vis-à-vis mathematics can be realized.

The quarterly newsletter of the Pakistan Mathematical Society is a step towards this objective. It is meant to provide our members a forum and a means through which they can interact intellectually, come closer, and achieve these objectives. The readers are asked to realize the importance of this newsletter and are requested to contribute short articles, provide news, and give their opinions. These valuable contributions in the newsletters will be a great service to the mathematical community and the welfare of mathematicians in Pakistan.

## **Butterfly Effect Discussed at Mathematics Seminar at QAU**

ISLAMABAD, Nov 18: In the realm of mathematics small changes or presumptions in the initial state of a system produces decisive effects on the result.

This was stated by Professor Qamaruddin Khan Ghori, adviser of the Comsats Institute of Information Technology, while speaking as chief guest at weekly seminar of the Department of Mathematics, Quaid-i-Azam University.

He said the disturbances caused by the fluttering of butterfly wings in Japan could have very strong effects in other big countries like US. The title of his lecture was “Chaos”. Professor Qaiser Mushtaq, the Chairman of Department of Mathematics, QAU, was also present on the occasion.

Defining chaos, Professor Ghori said: “ The ability of even simple equation to generate motion so complex, so sensitive to measurement that it appears random is called chaos”. Chaos can be solved but it would require backtracking and rethinking the entire process all over again, the Professor added.

Professor Ghori said minor shortcomings were as important as major slips. Illustrating ‘the butterfly effect’, Professor Ghori emphasized on the importance of minor details and smallest presumption in mathematics, which should be considered carefully and taken very seriously. He said it was imperative to consider assumptions in the initial stages carefully to avoid chaos.

**DAWN**

**18<sup>th</sup> November 2003**

DAWN

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## **HEC Plans to Setup Centre for Mathematics**

ISLAMABAD, Dec. 31: The Higher Education Commission (HEC) has decided to establish a National Center for Mathematics (NCM) at a selected public-sector university. The decision has been taken keeping in view the fact that it is necessary for a nation to improve the standard of teaching, research and practice in science, technology and engineering to compete and progress in globally-changing environment.

The HEC has defined several science and engineering fields as key national priority areas, and launched multiple programmes to build institutional and intellectual capacity. The project aims at improving mathematics education and research capacity in public-sector universities across the country.

Subsequently, the NCM will award grants to three distinct public universities for improving their mathematics departments during the four-year programme.

The proposed NCM will guide the process of restructuring mathematics education and help formulate and oversee implementation of all policies of the HEC for enhancement of mathematics.

The center will be responsible for planning, executing and evaluating the development of mathematics and research at both undergraduate and graduate level.

An annual workshop 'Reforms in Mathematics Education' for all universities will also be organized by the NCM. It will develop M.Phil and Ph.D programmes at the universities to produce researchers with a strong grounding in mathematics.

Universities willing to establish NCM should have the required infrastructure and facilities to house the center, however, preference will be given to those offering a four-year B.Sc. programme in mathematics.

The HEC has invited the public-sector universities to send proposals for the establishment of the NCM. The deadline for submission of proposal to the HEC is February one.

## **The Struggle Against the Impact Factor**

THE controversy over the use of the Impact Factor as a criterion for ranking scientists began with the publication of a list in 1999 by the Pakistan Council of Science and Technology entitled The Leading Scientists of Pakistan. PCST published a similar list the following year entitled Scientific Research in Pakistan.

In the above lists, the Impact Factor of Journal Citation Reports (JCR) was used for the first time by the government of Pakistan as a method to measure the quality of work of scientists, as well as to rate them nationally by ranking them in linear order.

But the JCR Impact Factor was originally invented by the Institute of Scientific Information (ISI) in Philadelphia, USA, as a criterion only to determine the relative worth of journals which publish the scientists' work, not to determine the relative worth of the scientists' work as such.

Since PCST published its first list of scientists in 1999, critics have pointed out a number of serious defects in using the Impact Factor to evaluate scientists. The main criticism is that the Impact Factor is a right tool but used for the wrong purpose.

ISI's website has this to say of the JCR Impact Factor: "The ISI Journal Citation Reports is a unique multidisciplinary database, ideal for broad range of practical applications by a variety of information professionals. It presents quantifiable statistical data that provides a systematic, objective way to determine the relative importance of journals within their subject categories."

The website also mentions some possible uses of the JCR Impact Factor, including that it "enables a variety of information professionals to access key journal data including librarians, publishers, editors, authors and information analysts". But nowhere does it mention that the JCR should be used to determine the worth of scientists, least of all to rank them nationally in order of merit.

A second major criticism of the use of the Impact Factor to rate scientists is that the latter's quality of research is being judged solely on the basis of the research work that gets published in a given list of journals. But there are a number of high standard reputable journals which are not in the given list, while there are subjects of research, e.g., agriculture, whose journals are not well represented in the given list.

Thus, what about those scientists, e.g., in the agricultural and engineering sectors who may be contributing a lot nationally but do not publish their work in the given list of journals? Thus using the JCR Impact Factor criterion to appoint someone at a top position or to give national civil awards, scholarships or research allowances is unfair and unrealistic.

It is basically not practical to have one formula to measure and quantify the work of all scientists across the board because each branch of science is very different in nature from the other. As D.A. Pendlebury, the manager of Contract Research at the ISI, himself had said, the Impact Factor was devised by the ISI to compare journals within the same field. It is not meant to be used to compare the work of individuals in different fields, as the government of Pakistan is doing.

A campaign against the use of the Impact Factor to rate scientists was launched as early as in 1999 when mathematician Dr Qaiser Mushtaq wrote an article against it in The News on 28 Oct 1999. Another article by Dr Mushtaq opposing the Impact Factor also appeared in The News on 19 July 2000.

On 19 August 2000, Dr Mushtaq's letter was published in The News in a response to an article by Prof Asghar Qadir in The News, favouring the government's use of the Impact Factor to rate scientists. Another critique against the Impact Factor by Dr Shahid Siddiqui was also **published in Dawn in ????**.

On 3 April 2001, Dr Mushtaq was invited to speak on the impact of the Impact Factor on scientists and science in Pakistan at a seminar at the Ghulam Ishaq Khan Institute. Dr Mushtaq opined that the use of the Impact Factor would adversely affect the already poor state of science in Pakistan. The seminar generated an interesting discussion during the question and answer session.

On 24 April 2001, an associate professor of mathematics from a well known college in Lahore wrote to the Ministry of Science and Technology protesting against the unfair evaluation of his research papers based on the Impact Factor, as a result of which he had been denied the post doctoral fellowship advertised by the ministry in August 2000, although he had already been accepted by the University of Montreal for post doctoral

study. The ministry had assigned the associate professor a very low Impact Factor of 0.528 and a zero rating citation count despite the fact that his research work had been cited at the international level

In August 2001, the use of the Impact Factor to measure the worth of scientists in Pakistan was criticized at the forum of the second Pure Mathematics Conference in Islamabad. Mathematicians at the conference objected to the fact that a criterion, which was originally designed to measure the worth of scientific journals, was being used to measure the worth of scientists in Pakistan. This they said, in effect rendered mathematicians as the least productive of scientists in Pakistan.

One mathematician at the conference denounced the Impact Factor as an inaccurate and poor attempt to quantify the subjective matter of praising the worth of a scientist.

Meanwhile in January 2001, some mathematicians led by Dr Mushtaq approached the Federal Ombudsman and filed an application against the government's use of the Impact Factor to rate scientists. A hearing was thus held in which both sides argued their respective viewpoints. Finally in September 2001, the Federal Ombudsman issued its verdict in favour of the complainants.

In its findings dated 26 Sept 2001, the Federal Ombudsman wrote: "...it is acknowledged that the Impact factor criterion has its limitations, which are all the more significant in the case of disciplines of physics or mathematics. It would certainly be unfair that those in the aforementioned disciplines be judged wholly and solely on the basis of this criterion for the purpose of promotions, awards, research grants, etc. The same would amount to injustice and hence, mal-administration as defined in Article 2(2) of President's Order No 1 of 1983.

It is therefore recommended that the Impact Factor criterion may not be taken as the sole criterion for the assessment of individual scientists, specially those in the discipline of mathematics..."

Proponents of the Impact Factor readily admit that the use of the criterion to assess the work of scientists has its defects. The then minister of science and technology, Prof Atta-ur-Rahman, had himself admitted "the drawbacks which the Impact Factor assessment process has" in a reply letter dated 10 August 2000 to Dr Qaiser Mushtaq regarding the Impact Factor.

The then Dean of the Faculty of Natural Sciences, Quaid-i-Azam University, Dr Asghar Qadir, in his article in The News published on 7 August 2000 advocating the use of the Impact Factor, also wrote that there were "many problems" associated with the Impact Factor.

The main counter argument of the proponents of the Impact Factor is that a rough yardstick for assessing the quality of scientific productivity in Pakistan is better than no yardstick at all. This has been stated by both Prof Atta-ur-Rahman and Dr Asghar Qadir.

Critics however strongly believe that the negative impact and damage to science arising from the Impact Factor's "drawbacks" and "many problems" will more than counter any advantage which the proponents say using the Impact Factor will have in Pakistan.

## **Opinion of Foreign and Local Experts on the Use of Impact Factor and Citations Count**

‘It is too bizarre that one's status could be determined by the arbitrary assignments of numbers to the Journals in which one happened to publish. I have never encountered the method of assessment which is used in “The Leading Scientists of Pakistan”. The use of the SCI Journal Citation Reports is an example of a seriously flawed basis for making comparisons.’

**Professor D.A.R.Wallace**

Glasgow University, UK

‘The document "Leading Scientists of Pakistan" produced by PCST is certainly very disturbing and also surprising. Most intelligent scientists and administrators are well aware of two facts: one, that we do not yet have reliable bibliographic measures for comparing or making absolute ratings of the value of the work done by research workers; two, that in any event, bibliographic measures appropriate in one field are inappropriate in others. An impact value based on the simple measurement of how many times a journal is cited makes no sense as a measure of the quality of the papers published in it, let alone the quality of the mathematicians publishing there.’

**Professor P.M.Neumann**

Oxford University, UK

‘The use of management-type figures which claim to enable comparisons to be made, can be utterly misleading. Figures are only as good as the premises on which the figures are based and often, the premises of many widely-touted management figures are seriously flawed. The use of Philadelphia's Institute of Scientific Information's SCI Journal Citation Reports by PCST is one such example. The only real criterion of an individual is quality and that does not admit of simple numerical assessment.’

**Professor G.A.Jones**

Southampton University, UK

‘I have found your point of view on Impact Factor quite justified. There is no gainsaying the fact that a scientist’s worth should not be gauged merely from the number of times the journal that contains his publications. ... I consider Impact Factor an easy way to project oneself.’

Dr Abdul Qadeer Khan  
A.Q.Khan Laboratories, Pakistan

‘The point of view put-forth by Professor Qaiser Mushtaq has been studied in depth and agreed to by the NUST.’

## **Rector NUST, Pakistan**

‘I have gone through this (your) report (on Impact Factor) and found it very convincing. In order to have a fair and accurate evaluation of one’s scientific work, it is important that the criteria of evaluation is free from the inadequacies which you pointed out in your report.’

## **Technical Secretary**

Defence Science & Technology Organization  
Ministry of Defence, Pakistan

‘I fully agree with the views expressed by you (in your article Rating Pakistani Scientists) and would defend them at whatever forum the issues are discussed.’

## **Professor Khalid Latif Mir**

Chairman  
Department of Mathematics  
University of the Punjab, Pakistan

‘My experience of more than forty years at more than half a dozen universities of the world unambiguously proves that the assessment of the worth of a scientist based on the Impact Factor is far from reliable because this unscientific approach is being supported and projected by those who have an axe to grind.’

## **Dr.B.A.Saleemi**

King Abdul Aziz University, Jeddah



## Interview of Professor Xiong Jincheng

Professor Xiong Jincheng is basically a topologist. He did his PhD from USA at the University of Maryland under the supervision of Professor Chu. He has been an associate member of Abdus Salam International Institute of Theoretical Physics, Trieste, Italy from 1984-1990 in the field of Dynamical Systems. Now he is teaching at South China Normal University, Guangzhou, in Guangdong province, China.

**Question:** You are currently visiting Pakistan. How do you feel being here?

**Answer:** I had no idea about Pakistan before arriving here. It is a very beautiful country, people here are very friendly and hospitable especially towards Chinese. I am very happy here, and I am not finding words to express my pleasure. Language is a barrier.

**Question:** There are strong relations between Pakistan and China. How these relations can be utilized to promote mathematics in the region?

**Answer:** I think there are two ways:

(i) Relations should be established at government level for this purpose. There should be agreements for the exchange of students, teachers, and researchers between the two countries.

(ii) Exchange of mathematicians should be at the level of the PMS and the Chinese mathematical society. Mathematicians from both countries should participate in seminars/conferences held in these countries.

In China twenty years ago, research in mathematics started because of Cultural Revolution and it is getting better and better every day. In Pakistan mathematics is good here. Work is being done in groups, and semi-groups. We can help each other in different fields. In China groups and semi-groups are fields of special interest.

**Question:** Why do you think one should adopt mathematics as a profession?

**Answer:** Mathematics is a splendid field of scientific work. It is the best science we ever had. Every one needs mathematics. Decisions are made on the basis of mathematical information. First of all, a mathematics teacher must know it for teaching purposes. Then there is the field of research where mathematics is present in nature everywhere. One should adopt mathematics as profession because it is required everywhere.

**Question:** How can pure mathematics play a role in the development of a nation?

**Answer:** Pure mathematics is the base of mathematics. Every nation needs mathematics for scientific knowledge, because scientific theories and ideas are expressible only in the language of mathematics and the base of mathematics is pure mathematics.

**Question:** Do you think fundamental research in mathematics is beneficial?

**Answer:** No doubt, it is beneficial.

**Question:** Can PMS and the Chinese mathematical society co-operate with each other?

**Answer:** It is not a problem, but I am not the head of the Chinese Mathematical Society. He should be contacted in this regard.

**Question:** Do you have any suggestions for the forthcoming 5<sup>th</sup> International Pure Mathematics Conference 2004?

**Answer:** I think more exchange of ideas is needed. At the 4<sup>th</sup> International Pure Mathematics Conference 2003 very few mathematicians from abroad were present. Next time, I hope that more will come.

**Question:** What are your views about the 4<sup>th</sup> International Pure Mathematics Conference 2003?

**Answer:** It was a great success.

## **Dogmatism and Irrationalism: Bane of the Muslim World**

Islamabad, 12 Nov: The door of ijtehad has been closed for 300 years now. This is why the Muslim world has been so deficient in producing philosophers, scientists and scholars. This is why that even now when the Muslim world commands such immense resources, it lags so far behind the West in science and technology.

These were the opening remarks of Prof Khwaja Masud, well known educationist and intellectual, who was speaking at a seminar today at Quaid-i-Azam University. The seminar was organized by QAU's Department of Mathematics.

Prof Khwaja Masud said that science and philosophy cannot flourish in an atmosphere vitiated by obscurantism, dogmatism, fanaticism, intolerance and irrationalism. Science needs an intellectual environment whose keynote is enlightenment with rationalism, humanism and pluralism as its driving forces.

Science is necessary and science has to make its way by rooting scholasticism. It demands an inquisitive spirit, a pioneering zeal and an enterprising élan, Prof Khwaja continued.

Scientific inquisitiveness has a base in rationalism. Scientific thinking is dynamic and ever changing. The historian, sociologist and philosopher may differ on various problems concerning science but they are unanimous as regards the need for an appropriate worldview for its birth and growth. It blossoms in an environment suffused with humanism, realism and rationalism. It was renaissance, followed by Reformation which created a new worldview, a new sensibility that threw the floodgates open to science in Europe.

Prof Khwaja Masud said that the Renaissance focused attention on man and nature, whereas reformation emphasized direct relationship between God and man. It eliminated the role of priests as intermediaries between God and man.

Only change has permanence, Prof Khwaja Masud quoted Iqbal. This change has to come from through an intellectual revolution, based on rationalism and humanism said Prof Khwaja Masud. Therefore, Renaissance and Reformation are necessary in Islam.

Iqbal said: “If the Renaissance of Islam is a fact, we too one day like the Turks, will have to re-evaluate our intellectual inheritance. We are today passing through a period similar to that of the Protestant Revolution in Europe and the lesson of the rise and outcome of Luther’s movement should not be lost on us.” Iqbal said this in his 6<sup>th</sup> lecture on Reconstruction of Religious Thought in Islam.

Despite Iqbal’s prediction some 75 years ago, the ummah has bypassed both Renaissance and Reformation, said Prof Khwaja Masud. Without experiencing these great movements of history, Islam shall not be able to meet the challenges of the 21<sup>st</sup> century.

All that we need to do, said Prof Khwaja Masud is to adopt a rationalist, humanist and tolerant approach to life and allow all flowers to blossom – the essence of Renaissance and Reformation.

These movements were at the threshold when Imam Ghazali wrote his Refutation of Philosophy. Later appearance of Ibn Rushd’s Refutation of Refutation paved the way to rationalism and humanism flourishing into the movements of Renaissance and Reformation. The Muslim world was influenced by Imam Ghazali’s Refutation of Philosophy whereas European thinkers were influenced by Ibn Rushd’s philosophy Refutation of Refutation. The doors of Ijtihad were closed because of Imam Ghazali’s writings.

History bears out that scientific brilliance is always accompanied by mathematical efflorescence. In fact, mathematical discoveries paved the way for spectacular advances in science. No nation has ever achieved scientific greatness without attaining mastery over mathematics.

When the Muslims dominated the world of science, they were superior in mathematics. The discovery of Algebra by Mohammad bin Musa al-Khawarizmi influenced Europeans until the 16<sup>th</sup> century. It changed the entire way of thinking and scientists started speaking in terms of algebraic expressions which involved unknowns.

Prof Khwaja Masud quoted Prof Qaiser Mushtaq, who wrote that the influence of the algebraic concepts by al-Khawarizmi so deeply influenced the West that solutions of algebra equations dominated the entire Europe and it gave birth to the theory of groups which had its effects on many branches of science.

Prof Khwaja Masud also said that Omar Khayyam and Nasiruddin Toosi showed that every ratio of magnitudes whether commensurable or incommensurable might be a number, irrational or rational. The magnitude of this achievement became clear when recognition of negative and irrational numbers was attained after the beginning of Renaissance in Europe.

There was no thinker in the Muslim world thereafter to follow Omar Khayyam and uphold rationalism, said Prof Khwaja Masud. It was he who used graphs to combine algebra and geometry to solve the cubic equation. These ideas were later picked up by Descartes who performed the tour de force of combining algebra and geometry along with founding a new philosophy with the dictum: I think, therefore I am.

It was al-Biruni who hit upon the great mathematical idea of function which introduced the concepts of movement and interdependence, seeing the world as a conglomeration of interdependent processes. The concept is the essence of dialectics.

Unfortunately, said Prof Khwaja Masud, this revolutionary idea remained untapped by the Muslim world due to the dogmatism and irrational approach towards the existing realities.

Prof Khwaja Masud said that he agreed with Prof Mushtaq who wrote in one of his articles, Mathematics: An Ally of Analytical Thought, that the spirit of mathematics is one of free inquiry. It is an expression of the whole man. It breeds rationalism, which, in Iqbal's words, is an ally of analytical thought. Mathematics is a mixture of analytical description and synthetic interpretations. It opens up new dimensions of wisdom which is a prerequisite for bringing renaissance and reformation movements in the Muslim world.

## Interview of Professor K.P.Shum

### Introduction

Professor Kar Ping Shum is a well-known algebraist from Hong Kong. He is a professor at the Chinese University of Hong Kong and President of Southeast Asian Mathematical Society, Director and Professor at the Institute of Mathematics, Yunnan University, Kunming, China. He is an editor of a number of international mathematical journals. He is Editor-in-Chief of the Southeast Asian Bulletin of Mathematics. He is author of a number of books on algebra and has many important research papers to his credit.

**Question:** You are currently visiting Pakistan. How do you feel being here?

**Answer:** I feel very happy, it is very good. I am here in Pakistan for the first time. Young people are very keen here to do something in Mathematics. They are enthusiastic about mathematical research.

**Question:** There are strong relations between Pakistan and China. How can this be utilized to promote mathematics in the region?

**Answer:** Governments of both countries will have to play their part. There should be educational exchange, and ministers of education from China and Pakistan can formulate such a plan for exchange of students and teachers in mathematics particular. There should be exchange at the normal university level because you need good teachers for good mathematics. From research only few are able to get benefit, but teachers are beneficial for the whole society. So there should be exchange teachers between both the countries.

**Question:** Are you satisfied with the quality of mathematical research in South East Asia?

**Answer:** Hong Kong, Singapore, Malaysia, Brunei, Thailand, Vietnam, and Indonesia are among the members of the South East Asian Mathematical Society. We are trying to bring Burma, Laos and Cambodia in it. All these countries have different backgrounds. In Singapore, Vietnam and Hong Kong, they have well-trained and better teachers of mathematics. In the past, countries like Philippines, Brunei Malaysia did not have PhD teachers. This Society was formed in 1972, Hong Kong and Singapore being its founders. The aim was to boost the standards of Mathematics in countries like Malaysia, Philippines, and Indonesia. This experience was very good and now they are producing PhD's of their own, while in the past young people had to go abroad. So the quality of mathematics has improved and this had surprised many others. Conferences are held across the region each year, in the Philippines, Indonesia, Malaysia, and Singapore. In 1990 the first Asia Mathematics Conference was held in Hong Kong. About 400 mathematicians participated. In 1995, we organized the 2<sup>nd</sup> Asian Mathematics Conference in Thailand where 350 participated. In 2000 in Mahra, Philippines 650 people participated. Few Pakistanis attended these conferences. In 2004, the Asian Mathematics Conference will be held in Singapore. Pakistan should send its delegation there. We want to minimize the gap between East and West.

**Question:** Why do you think one should adopt mathematics as a profession?

**Answer:** I think that developing countries need many mathematics teachers. If you want to study computer science, you need mathematics. There are many banks that need and hire mathematicians for risk management. Plack-Shoes model is a mathematical model which can be applied for investment in stock exchange markets. Actuarial Science is based on mathematics. Accountants also need good training in mathematics, which is not only good for book keeping but also for logical decision-making.

**Question:** How can pure mathematics play a role in the development of a country?

**Answer:** I think for applied mathematics, you must have a foundation in pure mathematics. If you want to develop a new theory, a new method or establish a mathematical model you need pure mathematics. For example, you can find that during the last twenty years, most of the Nobel Laureates are basically from mathematics. Kantorovich obtained his Nobel Prize in 1974 in economics. He was a pure mathematician from Russia. Paul Samuelson of Norway obtained his Nobel Prize in Economics in 19?? but he was a pure mathematician.

If there is no Pure Mathematics you do not have dynamicity in the country.

**Question:** Do you think fundamental research in mathematics is beneficial?

**Answer:** This is obvious, because we train people to analyze things logically, not just about things on the surface. Many new ideas, like Boolean algebra are playing pivotal role in computer science. It is pure mathematics. Computer Languages are outcome of pure mathematics. The idea of learning mathematics should be promoted among students

because it raises the standard of life, it helps in organizing things. Operational research and Game theory are being used in daily life and societies are benefiting from this.

**Question:** You are the editor-in-chief of the Southeast Asian Bulletin of Mathematics, Please tell us about it, what type of research it publishes and how a young scholar can get his/her paper published there.

**Answer:** The Bulletin started twenty-seven years ago in Singapore. Then it moved to Hong Kong. I became the Editor in 1991. The Bulletin was being published in Nanyang University, Singapore, then it was published by World Scientific Inc. in Singapore. Since 1993 this journal is being published by Springer Verlag. Now from this year, we are going to publish six issues per year instead of four issues per year. But still there is heavy backlog. It publishes all kind of mathematics, including applied mathematics sometimes. Generally, it is pure mathematics oriented. All the papers published here have some proof. If a young scholar submits his paper here, the material should be new, original, having some idea and solve some problem. For young scholars we do not insist on very deep results, however, all papers must be refereed. Sometimes we require two referee reports. Now many papers are sent from China, India, and Iran. So we are not confined to the Southeast Asian region only. Therefore, it is an international journal. If a paper is supported by research grant, then US\$ 10 is charged per page. There is no profit making, so young scholars can get their papers published free.

**Question:** How can the Pakistan Mathematical Society and Southeast Asian Mathematical Society co-operate each other?

**Answer:** The co-operation has already started. Professor Qaiser Mushtaq is a member of the editorial board of the Southeast Asian Bulletin of Mathematics. In Pakistan they can invite members of the Southeast Asian Mathematical Society. Southeast Mathematical Society is supported by UNESCO grant. PMS should seek funding from national and international bodies.

**Question:** Can members of PMS have reciprocal membership of Southeast Asian Mathematical Society?

**Answer:** A proposal should be moved officially by PMS. Then we will consider the proposal in the council meeting of Southeast Asian Mathematical Society.

**Question:** Do you have any proposals for the forthcoming 5<sup>th</sup> International Pure Mathematics conference 2004?

**Answer:** I think they should invite the president of the Chinese Mathematical Society and some others from Russia because these are big countries in Asia. In Siberia especially, there are good mathematicians in certain fields. Russians have good mathematicians in the field of Number Theory and Computer Algebra. Then some mathematicians from Japan also should also be invited.

**Question:** What are your views about the 4<sup>th</sup> International Pure Mathematics Conference 2003?

**Answer:** This conference is well organized. The local mathematicians here are very enthusiastic about new research. This is very good starting. I think some speakers should be encouraged to read their papers in the Asian Mathematics Conference in Singapore in 2004, because Pakistan is a member of the Asian Mathematical family, so they should participate in mathematical activities at Asian and universal level.

**Question:** Do you have any message for your fellow Pakistanis?

**Answer:** Yes, many Asian countries have already joined the yearly International Mathematical Olympiad (IMO). Now a days, eighty to ninety countries are participating in the IMO. Each team consists of six students from the country, one leader, usually a university lecturer one deputy leader, usually a high school mathematics teacher and two observers, who are from the education department so ten members represent a country at IMO. Countries like China, Taiwan Japan, Korea, Thailand, Singapore, India, Philippines, Hong Kong, Mongolia, Vietnam, and Iran all had joined IMO and they have gotten very good results. China and Russia are almost always on top. Iran, Vietnam, Korea, Taiwan, India and Japan have been in the top ten. Singapore, Thailand, and Hong Kong are among the top twenty. This is the way to promote young talent in mathematics. China hosted the IMO in 1990, Hong Kong in 1994, India in 1995, Korea in 1997, Taiwan in 1998, Korea in 2000 and Japan in 2003. It will be held in Singapore in 2004. So Asian countries are very supportive. I think if Pakistan joins IMO, this will help promote mathematics here and I hope in future, Pakistan can host an IMO.

## **International Centre for Pure And Applied Mathematics**

The International Centre for Pure and Applied Mathematics (CIMPA) has planned the following programmes for mathematics in various countries and on various topics. For application procedure and financial conditions, please contact: CIMPA, “ Le Dubellay”, 4 avenue Joachim – Bât. B, 06100 Nice, FARANCE.

Tél : (33) 4 92 07 79 30 / Fax : (33) 4 92 07 05 02 / E-mail : [cimpa@unice.fr](mailto:cimpa@unice.fr)

Geometry and Differential Topology, and Algorithmic Geometry  
(School)  
May 17 – 31, 2004  
Marrakech (Morocco)

Partial Differential Equation and Application  
(School)  
July 19 – 30, 2004  
Lanzhou (China)

IV Mathematical Workshop for Latin America and the Caribbean (EMALCA)  
September 5 – 11, 2004  
Merida (Venezuela)

Algebraic Geometry and Arithmetic of Curves  
(School)  
July 5 – 16, 2004  
Beirut (Labanon)

Variational Analysis, Optimization, Optional Control  
(School)  
February 9 – 27, 2004  
Lima (Peru)

Mathematical Sciences Methods in Biology  
(School)  
January 5 – 17, 2004  
Valdivia (Chile)

Numerical Methods in Waves Propagation  
(School)  
April 2004  
Tunis (Tunisia)

Kinetic Equations: From Theory to Applications  
(School)  
December 8 – 2004  
Taipei (Taiwan)

Theoretical and Applied Aspects of some PDES coming from geometry or Physics  
(School)  
May 15 – 27, 2004  
Damascus (Syria)