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Ajoy K Ghatak – a physicist and teacher par excellence

Pankaj Kumar Choudhury

Recalling my acquaintance with this highly acclaimed gentleman, Ajoy K. Ghatak. My memory goes back to the days of Masters' studentship in the year 1986 while coming across the subject, Quantum Mechanics. To some extent, the subject was interesting to me, and we had to study this in all four semesters in a two-year M. Sc. course. On the advice by our course lecturer, we had to go through certain sections, particularly the Schrödinger equation and its use in treating some of the problems in Quantum Mechanics, of the book by *Ghatak & Loknathan* – a very popular duo name who not only did write on Quantum Mechanics, their authorities can be witnessed in some other subject arena (of physics) as well through multiples of published volumes. That was my first interaction with Ghatak Sir, though not face-to-face. Through even books it left like a very prominent impression of his being an academic giant. During that time, several books were in record realised by leading publishing firms, and authored by this duo.

In the beginning span of my Doctoral studies pivoted to fiber optics, one afternoon, my advisor showed a letter stating the announcement of a two-week training course – QIP-CEP Course on Optical Electronics – to be conducted at the Indian Institute of Technology (IIT, Delhi) in May 1990. Incidentally that letter was from Ghatak Sir! By that time, I was involved in consulting a few relevant research articles and books to learn the subject in greater detail. Indeed, the book *Inhomogeneous Optical Waveguides* by *Sodha & Ghatak* was also among those. Interest grew and I was keen to participate in the program. However, my financial capability was not strong enough to pay Rs. 1000.00 toward the Course registration fee. Apart from that, I had to stay in a costly place like New Delhi for about 02 weeks. Nevertheless, I somehow made up my mind to participate, and I did.

My first face-to-face interaction with Ghatak Sir happened in 1990 while listening to his lectures during the above mentioned QIP-CEP Course. In that event, we were given a copy of his newly launched book (coauthored with K Thyagarajan) on Optical Electronics – another thick volume on the physics behind fiber optic guides! In the course, many IITD professors delivered lectures on different topics related to fiber optics. Ghatak Sir's excellent lectures specifically made me judge his authority on the subject and justified the fame he earned among the optics R&D community. In those days, hardly published research articles on fiber optics could be found, at least from the Indian scientists, without referring to the papers by A K Ghatak and his Fiber Optics Research Group at the IIT Delhi. I also cited Ghatak Sir's several articles/books in most of the papers. Perhaps a kind of concept existed that citing Ghatak Sir's papers would leave more impact to the presentation of a relevant research work.

While being at the IIT Delhi, once I happened to be in his office to ask for a few reprints of his papers. His response was cordial. He satisfied me with a few of the recent ones, which I was happy to receive. I found him well-organized in office, which had shelves full of books and papers put around. I can recall well his brown colour office briefcase treasured with all sorts of *fiber optics principles*!

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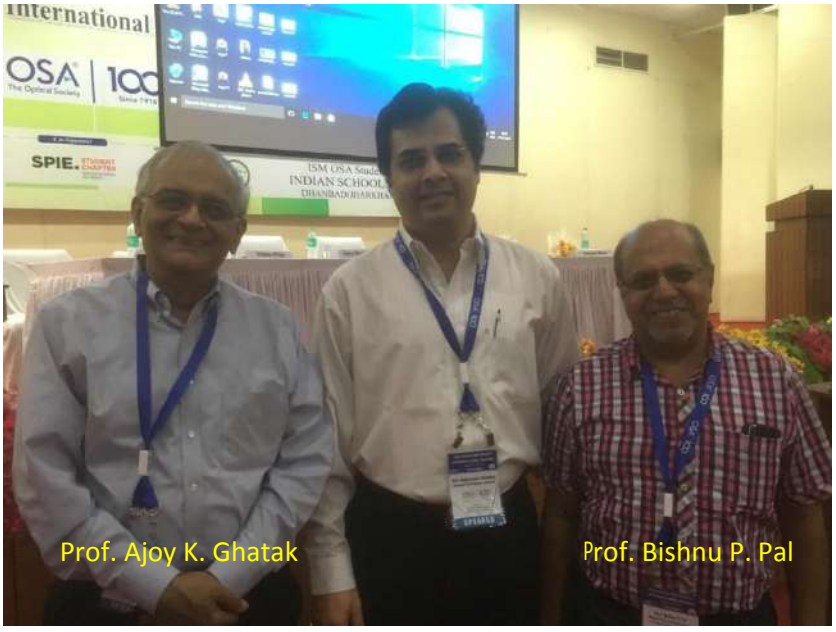
During the span of the Course, I had the opportunity to visit the fiber optics lab at the IITD and interact with the professors and students. Ghatak Sir was the core scientist in the effort of establishing excellent lab facilities over there – as remarked by his fellow colleagues and research students. To the best of my knowledge, IIT Delhi was the first institution in India to provide world class fiber optics laboratory of research level.

While interacting with the fellow colleagues and students at the IIT Delhi, I found them greatly honoured to be in Ghatak Sir's research group. They loved him from the bottom of their hearts. Teacher-student binding reflects more the quality of a teacher as he/she is charged with the development of knowledge, practices and habits of mind to enrich lives. Indeed, Ghatak Sir has the qualities that made him to acquire extraordinarily high level of esteem. The Chinese proverb – *A teacher for a day is like a parent for a lifetime* – suits well on him.

Oh, I missed out stating his kindness to me. In the context of my financial situation mentioned before, Ghatak Sir was the one who ordered his colleague(s) in-charge to waive my QIP-CEP course registration fee; I was overwhelmed! Apart from that, he also arranged my full train travel fare.

After the Course got over, though I was not in direct contact with Ghatak Sir, the publications from his research group always kept me abreast of the recent developments in fiber optics lexicon. In those days, the e-mailing facility was not available. However, once in a while I used to drop letters to him in certain occasions.



Along with Profs Ghatak (left) and Pal (right) during the IONS conference (2016).

The next spell of our meeting was in September 2016 at the Indian School of Mines (presently IIT-ISM, Dhanbad) during the International OSA Network of Students (IONS) conference – after a span of some 26 years! Ghatak Sir was there to deliver an invited talk, and I was participating under the OSA Traveling Lecturer Program. This gentleman was the same – highly passionate to teach optics! One of the topics he taught us was on the mysteries of sky, showing a photograph of a man on the moon. He fantastically explained how the sky will be completely dark during the day time from the moon, and the other related phenomena of light. His presence and excellent lecture made me to refresh over a quarter-century old image

of the IITD event, which I was a part of; that seemed to be getting blurry with time. We had a cordial meet with varieties of talks including the exchange of new research ideas. I really felt proud to find myself in Ghatak Sir's proximity sharing the same platform to deliver talk.

During communications afterwards, Ghatak Sir invited me to see him at his house in New Delhi; I still look forward for the opportunity. Meanwhile, nearly a couple of years ago, he shared with me a beautiful picture of a sunset, which he could capture in Jodhpur (India) on the 30th November 2017, and e-mailed the same to me on the 24th December 2017. He wrote to me:

"*The photograph shows the elliptical sun during the sunset ... I have been trying to take a photograph of the setting sun for a long time ... it was in Jodhpur that I finally got to see an unpolluted sky and we could see the stars at night!! It was really a great experience.*

The setting (or the rising) sun is elliptical in shape and red in color because of the presence of air... If we are on the surface of the moon, the setting sun will be white and circular in shape and the sky will be dark because the moon has no atmosphere!!!"

The sunset clicked by Prof. Ajoy K. Ghatak, as shared with me on the 24th December 2017.

How passionately Ghatak Sir was willing to demonstrate the phenomenon of light in the context of Earth atmosphere! This explains the true way of learning science through nature.

On this same day (the 30th November 2017) he clicked another photograph with his wife; sharing with me, he captioned it as "*The old couple on the sand dunes of Jodhpur...*"! Indeed, a lovely appearance of the couple, but I personally find him still quite young to contribute more.

The years of dedication that Ghatak Sir made to nurture the optics community, particularly to make the IIT Delhi to be internationally recognized for optics research, will always be remembered. With all sorts of interactions that I have had with him, I found – not only did he build one of the finest optics research labs, not only did he put efforts to inspire generations of youngsters, he also found the love and affection from his students and fellow colleagues – the true ultimate that a teacher seeks in life.

I feel honoured to receive the invitation from Prof Bishnu P Pal, who also has been greatly attached with Ghatak Sir academically and socially, to contribute an article to the Special Issue of the Asian Journal of Physics (AJP), dedicated to his 80th birth anniversary. Time flies away – seems to me as if met him just a few

days back! To my thought, no better opportunity could exist to express my gratitude to this internationally known scientist – Prof Ajoy K Ghatak – besides choosing the AJP as the platform.

Prof Ajoy K. Ghatak with his wife, as shared with me on the 24th December 2017

Finally, I wish Ghatak Sir a wonderful span ahead in life. The society needs teachers like him to have long life and remain active in distributing knowledge. Indeed, he is a teacher par excellence; teachers like him are rare.

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