Laval University

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Interview

Fathi Habashi



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:: Interview with Fathi Habashi

Ahmet Deniz Bas, a PhD student at Laval University interviews Prof. Fathi Habashi. Read the full interview

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Interview of the Year 2013

Hello everybody, I am Ahmet Deniz Bas, PhD student at Laval University. First, I would like to express my sincere thanks and appreciation to Prof. Dr. Fathi Habashi for his invaluable help and contributions to find a PhD position for me in Canada and also accepting this interview.



with Fathi Habashi at lunch at Casa Grecque, Quebec, Canada, 2013

-Deniz: Dear Emeritus Professor Fathi Habashi, as I know you are travelling the world attending conferences, symposia, giving short courses and visiting many universities. How long have you been travelling the world? Could you please share some experiences for the Turkish readers during these visits?

- Fathi Habashi:

I have been doing this to some extend since 1964 when I was teaching at Montana School of Mines in USA but I have been an active traveller since 1970 when I joined Laval University in Quebec City. My first important trip was in the former Soviet Union in 1977 during my sabbatical year when I made use of Canada - USSR Exchange Program. I went there to meet my colleagues who translated the first two volumes of my *Principles of Extractive Metallurgy*. I spent there three weeks visiting Leningrad, Moscow, Alma Ata in Kazakhstan, and Tashkent in Uzbekistan. In the same trip I went to Varanasi in

India to attend a conference on hydrometallurgy, then Cairo, Istanbul, and Madrid to get acquainted with the researchers there. During my second sabbatical I made use of the visits in England organized by the British Council and the Canada - Bulgaria Exchange Program where I spent three weeks in Bulgaria. In between these years I visited Brazil, Chile, Peru, and South Africa many times to give short courses and attend conferences.

I have to tell you something also about financing my trips. In most of the cases the host institution paid all expenses. In case of countries of limited economics they usually take care of local transportation and local accommodation and I pay the air transportation. The case of China is worth mentioning. For my first trips there I had to pay the air transportation but few years ago their economic situation was so good that they even sent me the air ticket. In Japan, they always paid everything; even when they ask me to chair a session they gave me \$ 20!

-Deniz: How did you first decide to write books? You have many books and as far as I know, you are the first author of extractive metallurgy books, pls correct me. How was the first impression from the readers? I am pretty sure that many people like me wonder to get your thoughts about writing books in the field of extractive metallurgy.

- Fathi Habashi:

That is a very good question. When I got Post-doctoral position in 1960 at the Mines Branch in Ottawa I wanted to get more information about extraction of metals from ores. I found some interesting books on this subject but all of them were either very elementary or written in a very monotonous way. Since then I started to take notes and collect papers for an eventual book. When I got the teaching position in Montana I had the chance of giving courses on extractive metallurgy and to make use of my notes. This became so large - - instead of one small book on extractive metallurgy it became a 4-volume work which I continued when I moved to Quebec. In the mean time I published my work on chalcopyrite which I have done when I was in Anaconda Research Department in Tucson, Arizona between 1967 and 1970.

The publisher Gordon & Breach, who published all proceeding volumes of the American Institute of Mining Engineers known as AIME at that time, asked me to make a new printing because the first 3000 copies were sold out. I got fairly good reviews in the technical press.

Another good experience for me was in the 1980s when the Education Department of the American Chemical Society asked me to prepare an audio course on *Metallurgical Chemistry*. The written text was edited by five chemists till it finally was produced in Washington, DC. I am also glad that in 1997 I edited *Handbook of Extractive Metallurgy*

in 4 volumes because it was greatly needed. Chemical engineers had already their *Handbook* since the 1940s. The *Handbook* was written by 159 authors.

Writing books is a good experience because you have to read a lot, to search a lot for the unclear points. I recommend for every young engineer to write. Now, you have to remember that people in industry have no time to write books - - they are concerned with production. Similarly, people in academia have no time to write books because they are busy writing proposals to get funds for research. Some of them may have 20 students at a time which is too much. I made very little research with few graduate students so that I can devote more time to writing.

-Deniz: I know that beside metallurgy also you are very interested in history. What do you want to say especially for the young people about history and metallurgy?

- Fathi Habashi:

Of course history is my hobby. I have been Chairman of the Historical Metallurgy Committee of the Metallurgical Society in Canada for 20 years. You cannot understand what is going on in the world, in science, or in my field of extractive metallurgy without knowing what was the background of the problem - - its history. Science is made by people and you have to read their biographies and their environment. History of the world is very complicated but little by little you will know what was going on in Europe, the Americas, etc. I wrote volume one of *Readings in Historical Metallurgy* in 700 pages and I hope to write the other volumes I am planning. In the introduction I explained why we should preserve our heritage and what our predecessors have done in this respect.

I also wrote From Alchemy to Atomic Bombs, Schools of Mines, Chemistry and Metallurgy in the Great Empires, and edited A History of Metallurgy.

-Deniz: I am a big follower of your books and papers from my undergraduate studies. I know that you are travelling very often. You were in Chile last month and you visited Peru last week and now you plan to visit Morocco next month in December. In February 2014, you will attend to SME Meeting in USA. It seems very exhausting. How do you manage your agenda?

- Fathi Habashi:

Yes, travelling needs much preparation: ticket, hotel, itinerary, correspondence, etc. Now it became easy to make all these things by Internet but travelling became worst since September 11, 2001. Inspection in airports became so annoying and time consuming.

Anyway, to travel you must be in good health to be able to withstand walking long distances, carrying suitcases, mounting stairs, etc. You must be prepared to face difficulties and unexpected problems. By the way I was pick-pocketed twice in Europe.

-Deniz: Dear Habashi, What would you like to say about metal extraction processes, recent developments in Canada and in the world? Which metal you think that will receive much attention in the future?

- Fathi Habashi:

I am not exaggerating but Canada is a leader in extractive metallurgy. Many hydro- and pyrometallurgical processes were invented in Canada. Also Canada is the largest producer of aluminum, uranium, nickel, cobalt, and zinc. It produces copper, gold, ferroniobium and ferroallys, titanium slag, and many industrial minerals. Do not forget that pressure leaching of sulfides and precipitation of nickel and cobalt was first practiced in Canada on large scale. We are proud of Sherritt-Gordon who was behind all these developments.

-Deniz: Dear Habashi, What would you like to say about gold hydrometallurgy? How do you see the present and future of gold processing, new technologies and processes?

- Fathi Habashi:

Gold has a special place among metals. It is the oldest metal exploited by man, it plays an important role in society and in world economics. It caused unprecedented mass migrations on three continents, and at least one war. It was responsible for creating many large cities, it is highly prized, it has been the inspiration of numerous myths, it was the ultimate goal of alchemists, it is stored in the vaults of banks, widely on display in oriental bazaars, and is generously used in decorating churches and temples. Its determination in ores and ingots was of utmost importance that gave birth to modern analytical chemistry. No wonder the metallurgy of gold is very important and trying to recover small amounts in ores is our utmost goal.

-Deniz: Dear Fathi, You have been some times in Turkey. How do you summarize your visits to Turkey? What would you like to say about the role of Turkey in mining/mineral processing and metallurgy field in the world? And, what do you think about Turkish scientists?

- Fathi Habashi:

I have been a couple of times in Turkey and I was impressed by its history and how the Ottoman Turks invaded Europe and took Constantinople which changed the world since. I know that Turkey has the highest reserve of boron and you are actively searching to find new uses for this metalloid. That is very good. I think that Turkish metallurgists are very active. They organize very good conferences with excellent proceeding volumes. They also publish very good journals.

-Deniz: Dear Habashi, I am sure that many young students/researchers (undergraduate and graduate) in these fields are happy to hear from you. What do you want to suggest them to be a good scientist?

- Fathi Habashi:

Few years ago I wrote in *Au fils des événement*, Laval University weekly journal [June 19, 2003 page 6], some advices to our graduates. Since these were in French, I mention them to you in English:

An advice, the old wise man Polonius offered to the young Hamlet was "Neither a borrower, nor a lender be", may be no longer pertinent. Here are some that I think to be more relevant in our present time:

- It is highly recommended that you do post-graduate work for an advanced degree to strengthen your knowledge.
- Post-doctoral fellowship is a very useful training. This is the period when the researcher relaxes for a year or two after hard work during the preparation for a doctorate. It is a period of reflection and should be a period of true academic freedom.
- Change your researches every 10 years, so your work will be always interesting and not monotonous.
- Do not try to get very deep in your work to such an extent that you finally know everything about nothing.
- Approach your research from a historical point of view. Who did previous work? Why? If he or she succeeded then why or if they failed, then also why?
- Do not stay in what is called "ivory tower". Travelling and attending conferences have enormous, sometimes unexpected benefits.
- Keep record of your work. Never rely on memory. Write Annual Reports, Conference Reports, and Trip Reports even if your employer does not request them.
- Try to explain your work in simple words so that even a layman can understand.

- When writing a report you have to be concise without destroying the sense, and lengthy without being redundant.
- A picture is better than hundred words. So, illustrations are very useful to help remember a phenomenon, a process, a person, or an event. It will also help you transmit information rapidly.
- Knowing foreign languages is an asset. But, this can be learned only when you are young. So, profit during your youth to learn languages.
- Never depend on one book when searching a problem. You will be surprised to find how authors may differ when treating the same topic.
- Never make your aim to be the accumulation of wealth. If you are successful wealth will come along.
- Once you get a satisfactory job consider getting married so that you can lead a civilized life.
- You may become a distinguished scientist or a merited engineer but don't forget that you are first a human being who should be modest and considerate.

-Deniz: Dear Fathi, very surprisingly, I have heard about your new book titled "A Metallurgist On The Move" which will welcome us in 2014. What would you like to say about this book? What makes it special from others?

- Fathi Habashi:

Since I wrote a memo for every trip I made it was a relatively easy job to combine these in one book. I thought it will be one volume only, but it happened to be in eight volumes each about 700 pages because it is full of pictures. In the Preface, which is more than 100 pages, I wrote about my life in Egypt, USA, and Canada, the problems I faced, the surprises, the embarrassing situations, the changes that took place in life as well as in metallurgy, the people I met, and the places I visited. You will be surprised, for example, how I discovered that the world was so small. On one morning at the hotel at Guanajuato in Mexico where I went to give a short course, I was face to face to the then Quebec Premier! Thanks to my wife who was keen to make pictures every place we went.

The book will give a picture of metallurgy during a half a century period. It will be a supplement to my book *Extractive Metallurgy Today*. *Progress and Problems* published in 2000 in which I stated the changes in metallurgy that took place.

-Deniz- At the time of your undergraduate or graduate studies, whose footsteps you followed?

- Fathi Habashi:

In my graduate studies I was much impressed by Prof. Friedrich August Henglein (1893-1968) from Karlsruhe whom I attended his lectures in Alexandria University in January 1955 when he was a Guest Professor. When he learned that I will be in Germany to attend the ACHEMA conference in May of that year he was kind enough to invite me to visit him. This I did, and at his home I was introduced to Ida and Walter Noddack the discoverers of rhenium. He also presented me with his book *Grundriss der Chemische Technik* and took me by his car to show me the Black Forest. Since he sent me later the new edition of his book I donated the book to our Library - you are welcome to go and see it and the dedication he wrote to me. As a homage to this great teacher I dedicated to his memory my book *Ida Noddack (1896–1978). Personal Recollections on the Occasion of 80th Anniversary of the Discovery of Rhenium*, published in 2005.

-Deniz: If somebody asks you to describe yourself, what would be your answer? I know you always say that your aim is to encourage young people in this area. What do you want to say about that?

- Fathi Habashi:

I always describe myself as an old timer - - because I am now 85 and have retired from the University 18 years ago in 1996. I still keep my office there and go from time to time. I would only say to young people to know how to exploit the natural resources and improve our life.

-Deniz: If I ask you, pls. rank your three favourite topics/subjects in your field/area?

- Fathi Habashi:

All fields of extractive metallurgy are interesting but what is more interesting is to listen to Beethoven, Tchaikovsky, or Verdi.

-Deniz: Sorry for this very long interview, I came to my last question. What is your plan for the future, writing new more books or?

- Fathi Habashi:

Plans are plenty but the time is very short. I have already started volumes 2, 3, and 4 of *Readings in Historical Metallurgy* and an *Encyclopedia on Extractive Metallurgy* but no

time to finish. I also asked the Canadian Institute of Mining, Metallurgy, and Petroleum to start preparing a *Biographical Dictionary of Canadian Metallurgist* but the project is too big, costly, and not yet settled.

-Deniz: Would you like to add something else?

- Fathi Habashi:

Thank you very much for giving me the chance to talk to your colleagues. Definitely you are a good researcher and a great interviewer.

-Deniz: It is my great pleasure to make this interview with you. Many thanks to you and your wife Nadia for your kindness and help always.



Fathi Habashi, Nadia Edward Boulous and myself, Old Quebec, 2013

Ahmet Deniz Bas

Nov. 2013, Quebec City, Canada