



Progress & Perspectives

WOMEN IN STEEL

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Where did your education and career start?

I grew up in Egypt, received my first school education in Leeds, U.K. (1963–1966) and then moved to Egyptian schools to continue my school education and then completed my university study in (B.Sc. 1981 and M.Sc. 1983) at Cairo University, Faculty of Engineering, Department of Mining, Petroleum and Metallurgical Engineering. Afterwards, I returned for my Ph.D. at Leeds University (1984–1987) under the supervision of Dr. Peter Beeley.

Why did you choose to study the metals industry?

I was inspired by my father and my uncle to study metallurgical engineering. I used to accompany my father on factory and foundry visits, and I liked this environment a lot. I was also affected by my father's meetings with his postgraduate students and the discussions that took place among them. When I joined the faculty of engineering, my father advised me to study metallurgy and I remember him telling me "this is where you integrate material knowledge with manufacturing technology to develop sound and useful products." I had never appreciated this advice more than when I started my Ph.D. at Leeds University. This was where I realized that material engineering is the future for human progress. My father was a professor of mechanical engineering and obtained his Ph.D. from the Houldsworth School of Applied Science Metallurgy at Leeds University with supervision of Dr. Beeley too. My uncle, Dr. Youssef Ismail, initiated the aluminum industry in Egypt by founding Egyptalum, an aluminum plant situated in Nag Hammady, Egypt. My parents supported my choice to

select the academic field and to complete my studies in metallurgical engineering.

Tell us about how you have advanced in your career.

I started my career as a lecturer at Cairo University after earning my Ph.D. in 1987. I worked very hard since then to develop my academic career, while being involved in industrial activities. I was part of university teams that conducted industrial collaborative work for solving industrial problems at foundries and steel factories. I loved the environment and the challenges imposed by transforming science into real-life work. I was promoted to professorship in 2000 and I am currently professor of materials and metallurgical engineering. I joined the British University when it first opened in 2006 and I founded the Mechanical Engineering Department. I returned to Cairo University between 2011 and 2020 as I was assigned the head of the Metallurgical Engineering Department. Currently, I am back at the Mechanical Engineering Department in the British University in Egypt (BUE).

I was also a visiting professor in September 2006 at Freiberg Technical University, Foundry Institute; in October 2013 at the Institute of Metallurgy I-MET Claustahl and in October 2014 at Giesserei Institute GI Aachen.

Besides my academic work, I was selected by the Supreme Council of Universities to be the head of the staff promotion committee in 2019, and I am also a member of the national Foundry Auditing board and Standards and Quality Assurance National Committee.



As a result of this long journey, I am currently a leader of many research groups on a number of significant topics in the field: (1) Steelmaking, foundry, manufacturing and heat treatment research group (45 publications), (2) Advanced alloys and materials and nanodispersed composites research group (50 publications and three funded research projects), and (3) Renewable energy materials research group (12 publications and three funded projects).

Can you talk about the importance of support and mentorship in order to keep women in the steel industry?

The steel industry should target women who would progress their career as well as the steel industry. In this context family, school and professional mentoring would make a difference. But there are also challenges that come from commitments and demands required at a steel factory. These work obligations may be threatened by a woman's family duties, the most significant duty being to ensure the safety of children during the long working hours.

The main challenges in my career were when my children were babies and I had to leave them for the day. Luckily, my mother offered me great support at that time, which without I would have never been able to pursue my career. Other challenges included some resistance from male colleagues to accept women advising them, but this is usually diluted when they

find the woman of greater knowledge and they begin to listen and accept me as an advisor.

What advice do you have for young women who are interested in pursuing a career in a field that is typically male-dominated?

Building a career in a male-dominated field requires patience, wisdom and the ability to demonstrate the importance of skills generally held by women. I would also tell them that working environments vary and are not limited to harsh environments. I would also remind them that nowadays there are many safe places for children during their infancy ages.

Why do you feel diversity and inclusivity are key to a successful workplace, and the steel industry as a whole?

I have seen through working at universities that diversity is a key of success to the academic life. I would imagine that the same applies elsewhere. ♦