

Personal Memories

István Bársony

Research Institute for Technical Physics and Materials Science MFA, Hungarian Academy of Sciences, Budapest, P.O.Box 49, H-1525 Hungary

barsony@mfa.kfki.hu

How it started...

I got acquainted with the talented young chemist Zsolt Nényei, a process engineer at the renown Hungarian company Tungstam (now General Electric), Budapest some three decades ago when he obtained his PhD at the TU Budapest. By then he was already decorated with the "Best Inventor Gold Grade Award" of his company and returned from his Humboldt Fellowship stay at RWTH Aachen, at the Department Prof. P. Balk who was a great friend of the Hungarian and East-European researchers in general in the field of semiconductor physics and technology.

Hungary was having that time a well performing, extensive electronic equipment industry, which was badly in need of parts, ICs not obtainable from the West due to the restrictions of the trade embargo. This demand led to the formation of the Microelectronics Company in 1982. The company was an odd merger of the Semiconductor Department of Tungstam, a production oriented establishment being active in fabrication of bipolar devices and circuits, and the Industrial Research Institute for Electronics conducting research and pilot-production of MOS circuits, where I was a research engineer, too. His scientific achievements and the acquired international experience - at a time when it was a rarity behind the iron curtain - predestined him to become the head of the MOS process development. To start large scale microelectronics fabrication using Soviet and East-German technology and equipment in Hungary in 1982 was obviously much too late. I was lucky to spend the coming years in Japan. Ironically, the very same day in May 1986, when I reported to my company my return after three and a half years, the production facility in Budapest burned down in a fire accident. So did the hopes of the Hungarian microelectronics industry, since the insurance refund disappeared in the big mixing pot of the state budget, and had never been invested for the same purpose again.

In this desperate situation Dr. Nényei got the task and chance from the remaining tools and skills to try to re-establish at least a pilot-line clean-room close to the site of the inferno in the so called "N-building". Everybody took it for granted; the building was named after him, although it was not. He did his job with great dedication, I always remember him enthusiastically running up and down - chewing a piece of carrot or a chunk of raw cabbage as healthy food. Using the limited budget he has got he purchased new furnaces from Centrotherm, Blaubeuren, which was the origin of his acquaintance with Herr Kaltenbrunner. But this initiative, too, turned out to be obsolete, the Microelectronics Company in Újpest soon went bankrupt and the activities slowly stopped.

By then most of us were looking for other alternatives to stay in the field, which I found in the Netherlands. Dr. Nényei followed the call of Kaltenbrunner's company, which pioneered the development of the rapid thermal processing in Europe. He joined AST Elektronik, the predecessor company of Mattson Thermal Products to become the first director for RTP process development in 1988. When I have met him in Germany later that year in Ulm - I recall-, it was already obvious to me, the Nényei family probably decided to stay in Germany for ever. Actually none of us expected the communism to collapse so soon, which made all these than extremely hard decisions relativistic. Being an adventurer, after five years I returned to Hungary in 1993, and tried to collect the bricks and chips of the semiconductor development under the umbrella of a research institute of the Hungarian Academy of Sciences. Now I realize, I stepped essentially in Zsolt's footsteps - ten years later.

The old friendship between us has been sustained ever since. Whenever we needed some help, connections, partnerships, or the support in obtaining some second hand equipment at a favourable (i.e. for Hungarians affordable) price, Zsolt was always at hand with advice and action. Even if formally as Europeans by now we live within the same borders, in his heart he has been and remained a Hungarian (not only regarding his accent), and this we are very thankful for. While wishing him good health and happiness with his changing activities in his new situation, we count on his continuing friendship and collaboration in the future, too. Because the story is continuing...

Zsolt recently contacted us with his idea of jointly investigating the application of heavy water treatment in the cleaning process of Si wafers prior gate stack formation. The annual IEEE International Conference on Advanced Thermal Processing of Semiconductors – being organized since 1993 by his good friend, Bo Lojek (ATMEL) – offers a.o. young scientist the opportunity to introduce their work. This year's 15th annual event in Catania, Sicily, was a good occasion to present the results of our cooperative efforts, which we attach in a shortened version below.

István Bársony



Photo 1: Social gathering of Mary Martin and Bo Lojek, Márta and Zsolt Nényei.



Photo 2: Regional chair giving support to the young generation: Zsolt Nényei and Andrea E. Pap.