

HONORARY GRADUATE

MIKLOS REBAK

Miklos Rebak was born in Budapest in Hungary in 1933. After matriculating from grammar school in 1946 he began service as an apprentice aircraft instrument-maker in the Hungaro-Russian Airline (MAZOVLET). After four years of evening classes at a Technical High School, he qualified with a Technician's diploma. His studies at the Technical University of Budapest were cut short when he left the country abruptly in 1956.

Subsequently Miklos Rebak gained valuable expertise by working at companies including Zeiss and Omega in Austria, Germany and Switzerland. In 1962 he joined the Bernard Price Institute of Geographical Research at Wits where he worked for six years. After a brief interlude with a leading watchmaker he joined the staff of the Nuclear Physics Research Unit at the University where he remained until his retirement. This unit became the Schonland Research Centre for Nuclear Sciences in 1971. His impressive array of technical qualifications and experience leant towards the area of fine instrumentation: he is also a qualified watchmaker and took charge of the Special Techniques Laboratory at the Schonland Centre. Various difficult jobs were demanded of this laboratory, often involving the production of very thin films of target materials for particle-beam experiments, and/or delicate mechanical devices. Rebak was soon providing a reliable service to the researchers.

However, he is most closely associated with one particular and very unusual target material for accelerated experiments, not only here, but in laboratories all over the world. The material is diamond. In the past thirty years there has been an explosion of interest worldwide in this material, not because of its unique mechanical properties but because of its extreme thermal, optical, chemical, radiation and especially electrical properties. Perhaps we are not yet on the threshold of replacing all our silicon microchips with diamond ones, but the prospect of a niche market is coming closer, with our own university a frontrunner in the research.

In recent years Miklos Rebak has co-authored twelve papers published in respected scientific journals or delivered at international conferences. He also holds two patents. He has travelled abroad to exchange information with other research experimentalists and he is the only member in Africa of the prestigious International Nuclear Target Development Society. He, together with Wits researchers, has prepared diamond targets for experiments in many other laboratories and his collaboration is acknowledged in hundreds of research papers published all over the world. His leadership in this field is internationally recognised and spoken about wherever diamond research is discussed.

Most of these experiments have needed diamond slices orientated in specific directions with respect to the underlying crystal structure; some demanded especially flat, smooth surfaces, some required hair-thin diamond foils; others needed surfaces oriented on the hard octahedral planes, which cannot normally be polished. A knowledge of the physics, chemistry and materials properties of diamonds, insight and experience, as well as manual skill, were essential in order to fulfil all these requirements.

Rebak's talents and his interaction with Wits researchers in developing new lines of investigation have resulted in international collaborations which would not otherwise have existed. These have brought fame to the University in the field of diamond research, and cemented its relationship with the De Beers Diamond Research Laboratory. This modest man has also enabled the highest degrees of a score or so of research students.

Rebak has now retired from the University, but his services have been retained by De Beers, where he continues to practise his special skills and pass them on. De Beers allows him to spend some of his time on Wits research projects in the laboratory that he developed at the Schonland Research Centre.

Although he did not follow the training of a scientist, Miklos Rebak has been (and still is) a scientist's partner *par excellence*, enabling the bright ideas of many scientists to shine. Directly and indirectly he has brought honour to this university and it is with great pride and pleasure that the university confers upon Miklos Rebak the degree of Master of Science *honoris causa*.