

*In Celebration of the Fiftieth Anniversary of  
The Combustion Institute*



*1954 – 2004*



### Netherlands Section

The first representative of the Netherlands in the Combustion Institute Committee was Dr. J.J. Broeze, Director of the Royal/Dutch Shell Laboratory in Delft. Previously he was also author of the only contribution from the Netherlands to the 2<sup>nd</sup> Symposium, held in 1937, and the 3<sup>rd</sup> Symposium, held in 1948. The contributions to combustion research of Broeze and his colleagues at the Shell Laboratory, especially in the area of Diesel engine combustion, were well recognised internationally. At the 3<sup>rd</sup> Symposium Broeze was one of the four honorary foreign members of the Institute, appointed for the purpose of retaining close contact with co-workers in their countries. And the 1953-1954 Crompton-Lanchester medal of the Automobile Division Council of the Institution of Mechanical Engineers was awarded to him.

Judged from the contributions to the proceedings of the international symposia, the nature of the participation of the combustion researchers in the Netherlands in the activities of the Institute has changed over the years. In the first period, up to the 12<sup>th</sup> Symposium, we find a very limited number of contributions, all coming from industrial laboratories: Shell, Staatsmijnen (presently DSM) and Philips. In the 9<sup>th</sup> Symposium a contribution appears from the International Flame Research Foundation, located in IJmuiden, at the site of the Dutch Iron and Steel Industry, Hoogovens (presently Corus). (It should be remarked that the Dutch Section of the Institute and the Dutch Flame Committee which is member of the IFRF are separate organisations with separate membership list and meetings agenda.) The Foundation has had significant impact on the progress of industrial combustion research and in fact is older than the Institute. At the occasion of its 50<sup>th</sup> anniversary a memorial volume has been published. After a period of silence, lasting until the 21<sup>th</sup> Symposium, the IFRF started to be a regular contributor to the International Symposia, with papers published by R. Weber and co-workers in every symposium, from the 22<sup>th</sup> until the 29<sup>th</sup> Symposium.

The activities in the Dutch Section in the late 60s and early 70s were growing, mainly due to increased effort on combustion at the government research organisation TNO. At the 'Central Technical Institute TNO', J. de Graaf and G. Snellink made fundamental investigations on acoustic interferences of flames. (To be able to solve practical questions, e.g. burners in warehouses were quite noisy). At the TNO defence laboratory, the present Prins Maurits Laboratory, strong interest came up to start work on gas and dust explosions, while the research on propellant combustion and high explosive detonation increased its quality level. New facilities were built in that time and diagnostic high speed cameras became available. Gasunie Research and others joined in. About twenty, up to thirty people came to meetings like the annual meeting at TNO in Rijswijk and later elsewhere. People took it serious and

discussions were good; there was a constructive atmosphere. There was also a group of participants of TU Delft, Mechanical Engineering, working on fundamentals of industrial combustion.

The 25<sup>th</sup> Symposium, with four contributions from the Netherlands, signals a sudden rise in the level of activity which has persisted up to the present day. In particular a significant increase in effort was noticed at the Technical Universities of Delft, Eindhoven and Twente and at the Universities of Groningen and of Nijmegen. These university groups now fully participate in modern combustion research, combining advanced laser diagnostics experimental techniques with computational fluid dynamics and theoretical analysis. The increased effort at universities also led to changes in the board and activities of the Dutch Section. In the mid 90s there was a three year period without national symposia. A fresh start was made on January 23, 1998. At the site of the Gastec company in Apeldoorn a symposium was held on "Burner research in the Netherlands", and a new board was elected with members coming from the technical universities of Eindhoven and Delft. It was the first symposium co-organised with The Technology Foundation STW. The funding organisation STW has created the "Platform for clean and efficient combustion" to stimulate research on this subject in the Netherlands. Most of the members of the platform are also members of the Institute. Since 1998 every year a symposium has been organised jointly between STW and CI, and for several years the Dutch Flame Committee of the IFRF also co-organises this meeting, which is now called COMBURA, for "combustion research and applications". There have also been two joint meetings between the Belgian and Dutch Sections, in 2000 and in 2002. In total there are two Section Meeting a year. At present there are over seventy members, most of which are actively involved in combustion research.