



Dr Guido Dreosti

**Founding President of SAIRAC
Died 7 September 1997 at the
age of 92**

At the inaugural meeting of the South African Institute of Refrigeration held at Hotel Bordeaux in Cape Town on 17 July 1951, Dr Guido Dreosti was elected the founding president. The initial membership was 41, with Dr Dreosti being allotted membership number 1. He was president for the first five years and again in 1957/58 and 1962/63.

In 1962, the institute widened its scope to include air conditioning and became the South African Institute of Refrigeration and Air Conditioning (SAIRAC). Since 1951, until May 2024 4 863 persons have joined SAIRAC.

Dr Dreosti was a true scientist and had a wide range of interests pertaining to the food industry, particularly fish and fruit and its preservation by means of refrigeration. His qualifications had an engineering flavour to them and culminated with a doctorate in engineering physics from the University of Utrecht in Holland in 1930.

Milestones in his career include:

- Research into the pre-cooling of fruit for the South African export industry from 1930 to 1940.
- Director of the Fishing Research Institute, Cape Town.
- Technical adviser to the Perishable Products Export Control Board (PPECB).
- Research professor at the University of Cape Town.

Dr Dreosti published over 300 papers on subjects in the fields of refrigeration, dehydration, canning, and so forth. He made a lasting and valuable impact on humankind and left the world a better place.

SAIRAC launched the Dreosti Memorial Lecture in 1998 in memory of and to honour the outstanding achievements and leadership of its founder. The Dreosti lecture exemplifies the objective of SAIRAC to promote the unrestricted dissemination of knowledge and information.

JOURNEY TO A BETTER PLACE

A REFRIGERATION PERSPECTIVE



Traditionally when the refrigeration industry began to develop in the mid 1800's, natural refrigerants were used, however as the industry developed, in the early part of the 1900's, synthetic refrigerants were developed which became widely adopted by the industry.

In the mid 1970's the Ozone Depletion Potential of refrigerants became apparent, thus with the signing of the Montreal Protocol in 1987, the world started a process to reduce Ozone Depleting refrigerants which initially focused on the phase out of CFC based refrigerants (R11 and R12, R502), continuing with the phasing out of HCFC refrigerants (R22) and now focusing on the phase down of HFC based refrigerants, subsequent amendments in particular the Kigali Amendment to the Montreal Protocol saw the focus shifting to Global Warming to reduce the Global Warming Potential of refrigerants.

Worldwide, there has been a renewed focus on the use of natural refrigerants primarily; hydrocarbons (R600a, R290), R717 (Ammonia) and R744 (CO₂), however the high technical requirement for designing and using these systems with these two refrigerants is a barrier to widespread adoption.

Industry has looked at what alternatives are available to replace the current HFC refrigerants, from a technological and economic standpoint. Industry has, over the last two decades shifted to using hydrocarbons R600a or R290 as a refrigerant particularly in domestic refrigeration and light commercial systems, with a move towards larger systems.

SAIRAC has been at the forefront of advocating the use of natural refrigerants particularly the use of hydrocarbons R290 (Propane).

There has been a debate with regards to safety using hydrocarbons, with the new revised technical training syllabus and the revised safe handling of refrigerants training addressing these issues and concerns extensively.

We are all aware of the load shedding situation in South Africa which during 2023 was at its highest. Energy costs are increasing which impacts the bottom line of any company in the Heating, Energy, Refrigeration, Ventilation and Airconditioning (HERVAC) industry, therefore it is very important to the stakeholders that the system installed is operating efficiently and economically.

We invite you to join us on the "Journey to a better life - a refrigeration perspective" presented by Dr Andy Pearson.

Dr Andy Pearson graduated from the University of Strathclyde with a degree in Manufacturing Science and Engineering and joined Star Refrigeration in 1986, he working in their design office, as a site manager, a commissioning engineer and sales manager and then as Head of the Contracts Group. He completed his PhD at University of Strathclyde with his thesis on "use of Carbon Dioxide as a refrigerant" in 2006, he became the Group Managing Director of Star Refrigeration Ltd in 2016, an industrial refrigeration contractor based in Glasgow, UK. He has extensive experience of the use of climate-friendly refrigerants in the industrial sector, mainly with ammonia and carbon dioxide, but with an increasing interest in the use of hydrocarbons in industrial applications.

He has served on industry body committees:

- the Institute of Refrigeration in the UK, President from 2010 to 2013,
- Institution of Engineers in Scotland, President from 2020 to 2022,
- the International Institute of Refrigeration,
- the International Institute of Ammonia Refrigeration,
- ASHRAE,
- the British Standards Institute,
- including work with CEN and ISO.

Dr Pearson has extensive experience in the use of climate-friendly refrigerant in the industrial sectors using R717 (Ammonia) and R744 (CO₂) and increasingly with the use of Hydrocarbons in industrial applications and focusing on improving safety, reliability and efficiency in refrigeration, air conditioning and heat pump systems.

He contributes a monthly column to the ASHRAE Journal and has spoken at conferences and seminars around the world."

He was the Dreosti Memorial Lecturer in 2004 and is delighted to be invited back to South Africa to give an update on progress with natural refrigerants."