Proceedings of the International Conference
and Summer School on

THERMAL THEORIES OF CONTINUA: SURVEY AND DEVELOPMENTS THERMOCON '05

Università degli Studi di Messina
September 25-30, 2005
Messina, Italy

Dedicated to the memory of
Gerrit Alfred Kluitenberg

Guest editors
Vincenzo Ciancio
Mauro Francaviglia
Wolfgang Muschik
Liliana Restuccia

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON

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PREFACE

The international conference "THERMOCON '05" brought together scientists working in different disciplines of thermal theories of continua and discrete systems, such as classical irreversible thermodynamics, non-equilibrium thermodynamics, rational thermodynamics, extended thermodynamics, mesoscopic theories of continua, GENERIC (general equation for the non-equilibrium reversible-irreversible coupling), endoreversible thermodynamics, second law analysis, finite time thermodynamics.

There were 61 participants and 13 invited lectures in the frame of a summer-school describing the state of the art of these partial disciplines, their connections and differences to each other. In 21 contributed lectures recent developments and new ideas in thermal theories and their applications to materials and complex systems also in fields beyond thermodynamics were presented.

This conference was dedicated to the memory of Professor Gerrit Alfred Kluitenberg, eminent scientist and very appreciated teacher. His widow Miss Dini and his daughter Miss Cornélie Kluitenberg participated as guests and friends, and presented a memorial speech about his life. Kluitenberg visited the University of Messina since 1976, where he had V. Ciancio, L. Restuccia and E. Turrisi as students and later on as coworkers in the research on the thermodynamics of non-equilibrium with internal variables.

We thank the sponsors of this conference: Università degli Studi di Messina, Dipartimento di Matematica dell'Università degli Studi di Messina, Accademia Peloritana dei Pericolanti, FBP (Fondazione Bonino Pulejo), AAPIT (Azienda Autonoma Provinciale per l'Incremento Turistico), Comune di Messina, Provincia di Messina, Università degli Studi di Torino, TU (Technische Universität) Berlin, INdAM-GNFM (Istituto Nazionale di Alta Matematica - Gruppo Nazionale per la Fisica Matematica), MIUR (Ministero dell' Università e della Ricerca). We are grateful to Prof. Santi Scinelli for his great help and deep and very precious involvement into the preparation of this International Conference and Summer School, and to the PhD student Maria Paola Mazzeo for her profound participation and invaluable and very appreciated contribution to the realization of this volume published by the Accademia Peloritana dei Pericolanti.

The Guest Editors for this special issue

Vincenzo Ciancio
Mauro Francaviglia
Wolfgang Muschik
Liliana Restuccia

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Partecipants

DR. IR. G.A. KLUITENBERG AND THE UNIVERSITY OF MESSINA

Ladies and gentlemen,
In addition to the scientific lecture of professor Ciancio, I would like to tell you something about the collaboration between my husband and some members of the Messina University.

On the invitation of professor Ciancio, my husband came to Messina University in March 1976 to give some lectures about his theories. From that date on, the scientific collaboration started and became more and more intensive. In the beginning with professor Ciancio and for a short time also with professor Turrisi. Later on in 1982, professor Restuccia joined the team. Since March 1976, my husband came to Messina every year to give lectures and work together with Ciancio, Turrisi and Restuccia. Both professors, Ciancio and Restuccia, came several times to Eindhoven University. Furthermore there was a corresponding collaboration and my husband became a corresponding member of the Accademia Peloritana dei Pericolanti di Messina.

My husband and professor Ciancio participated as speakers in international conferences; for instance in Naples and in Marienbad, Czechoslovakia.

The last time, my husband came to Messina was in 1993. In April 1994 he died. He liked to come to Messina where he found scientists who were interested in his theories. I always accompanied my husband. For me it meant holiday and for my husband, research, work and also a bit of holiday. What began as only a scientific collaboration grew into a friendship. Our friends made us acquainted with Sicilian culture. I would like to thank you for that.

I will end by thanking the Committee for organizing this congress and dedicating it to the honour of my beloved husband and for you kind invitation to enable my daughter and me to be present here today.

In italian I would like to say: ringrazio gli organizzatori del Congresso per l'onore reso a mio marito e per la loro ospitalitá. Tante grazie.

Dini Kluitenberg-van den Hoff

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Gerrit Alfred Kluitenberg and Dini Kluitenberg-van den Hoff

MEMORIAL SPEECH IN HONOR OF DR. IR. GERRIT ALFRED KLUITENBERG

Ladies and gentlemen,

First of all I would like to thank professor Ciancio and professor Restuccia for organizing this international conference on thermodynamics and for dedicating it to the memory of my father. Of course, it is an honour for both, my mother and me, to be here today. It was very kind of you to invite my mother, and I am very happy to be able to tag along. This has enabled me to see where my father has worked all these years. I was asked to tell you something about my father, and it was difficult to decide where to begin. I could tell you lots of funny stories about the things he used to say and to do as a father. But that is probably not the type of thing you are interested in. When it comes to being a father, I can only tell you that for me and my brother, he absolutely was the best. Furthermore, he was a very loyal and loving husband to my mother. He was the type of man that made you feel that you were loved and appreciated. He always wanted you to exert yourself and do the best you could. Especially, when it came to studying and to personal development.

My father was a gifted and talented man with a broad interest and a wonderful sense of humor. Besides the obvious items, physics and mathematics, thermodynamics in particular, he was interested in politics, history, geography, languages, music, religion and sports. I used to call him a walking encyclopedia. He studied physics at the University of Delft, and during World War II he studied at the Conservatory in Arnhem since the universities were closed. His main subject was the piano. He had received piano-lessons from his mother for some time and this enabled him to become a student there. My father has even performed concerts and recitals and composed several musical pieces. After the war, in 1945, he worked as an interpreter for the English Liberation Army for several months. Afterwards, he regained his studies in Delft and obtained his Master's degree in Physical Engineering. Later on he went to the University of Leiden to obtain his doctorate with his thesis "Relativistic Thermodynamics of Irreversible Processes". Here his supervisor was professor de Groot.

In 1948 my father was awarded the "Bataafsche Studieprijs". This was a prize, or you could say a scholarship, granted by the Royal Dutch Oil Company for the period of four years. Nowadays known as the Royal Dutch Shell Company.

During his studies, my father was also active in national politics, and there came a point in his life that he had to decide what type of career he would like to pursuit; one as a politician or one as a scientist. Luckily for us here present today, he decided to go with science. But he remained active in politics, only now his scope shifted to regional politics.

My father has worked for over thirty years at the Technological University in Eindhoven. Besides research he was also an inspiring teacher. Even after he retired, at the age of sixty-five, he still went to the University to work. He has given lectures at Universities and some industrial companies like Shell in many countries.

Here at the University of Messina my father has spent quite some time. He was always glad to receive an invitation from either professor Ciancio or professor Restuccia .

Therefore, I would like to thank them once more for their hospitality and the honour that they bestow on my father's memory, my mother and me with this conference. Thank you very much.

Drs. Cornélie Sars-Kluitenberg

CURRICULUM VITAE OF DR. IR. G.A. KLUITENBERG

Personal details
Surname: Kluitenberg
First name : Gerrit Alfred
Born : 15 May 1925
Died : 05 April 1994
Place of birth : Rotterdam (The Netherlands)
Father : Architect
Mother : Music teacher (violin and piano)

Education

1931-1937 Primary school.

1937-1942 Lyceum (pre-university school) in Apeldoorn. Subjects: Dutch, French, German, English, Mathematics, Physics and Chemistry.

1942-1945 Started studying at the Technological University of Delft (Physics), but as a result of World War II, it was not possible to continue his studies here. So in 1944, he went to the Conservatory in Arnhem where his main subject was the piano.

1945-1951 Regained his studies at the Technological University of Delft and obtained his Master's degree in Physical Engineering (ir.).

1951-1954 Studied at the Technological University of Leiden, and here he obtained his doctorate (dr.) with his thesis entitled "Relativistic Thermodynamics of Irreversible Processes". His supervisor was prof. dr. S.R. de Groot.

Details about work

1952-1958 He worked as a co-worker of the F.O.M. (Foundation for Fundamental Research of Matter). In this quality, he worked at the Institutes for Theoretical Physics of the Universities of Utrecht and Leiden.

1958-1990 He worked as a senior scientist of the Department of Mathematics of Technological University of Eindhoven until his retirement. Besides research, he was also active in teaching at this University.

Additional information

In 1948 he was awarded the "Bataafsche Studieprijs" given to him by the Royal Dutch Oil Company. This was a grant/scholarship for four years. He was a member of the University Council of the Technological University of Eindhoven and of several Committees of the Department of Mathematics of

this University. Furthermore, he was a member of the National Academic Council of the Netherlands.

He held lectures at Universities and at industrial Companies in: Austria, Belgium, Czech, Germany, Italy, The Netherlands, Poland and The United States of America. He published several papers in international journals. He was active in politics; first on national level and later on in regional politics. He played the piano and performed concerts and recitals. He even composed several musical pieces. In 1945 he spent several months with english liberation Army as an interpreter. He was a loving husband and father and a true erudite man.

Dini Kluitenberg-van den Hoff and Cornélie Sars-Kluitenberg

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