RUTGERS, Arend Joan

Born: October 20, 1903 (Almelo, NL)
Died: September 2, 1998 (Almen NL)

Life and Work
After his secondary school at the Rijkshogere Burgerschool of Almelo, he obtains his master's degree of chemistry at the Municipal University of Amsterdam followed by his Ph.D. at the University of Leiden in 1930. His mentor is Professor Paul Ehrenfest. The subject of his doctorate is about the theory of thermoelectricity in crystals. In the preface he refers to the lectures and research laboratories of van der Waals, J.P. Wibaut, Zeeman, Lorentz, Ehrenfest, Fokker, J.M. Bijvoet and his contacts with Samuel Goutsmit (who becomes in 1945 head of the ALSOS mission, an advance team of scientists whose task it is to find out how far Germany is advanced in their research on atomic weapons) and Paul Dirac.
In 1931 he returns to Amsterdam as assistant in charge.
On November 17, 1933 he is appointed professor of physical chemistry at the faculty of sciences of the University of Ghent and professor of physical chemistry including thermochemistry and electrochemistry in the Special Schools (for the formation of engineers). In 1938 he becomes full professor and is elected as foreign corresponding member of the Royal Flemish Academy of Science, Humanities and Fine Arts (He is still Dutch!) and later on corresponding member of the Royal Academy of Sciences in the Netherlands. In Ghent (together with professor Goubau) he establishes a library and reading room for scientific publications and fixes up glassworks for the assembly of scientific instruments and for teaching future chemists the technique of glassblowing. Rutgers and his team (with i.e. Janssen and Nagels) have made headway with the quantitive understanding of electro kinetic phenomena.
Other research concerns the thermodynamics of unclear phase transitions, reaction kinetics and equilibria. With W. Rigole (who succeeds him after his emeritate), Rutgers confirms experimentally the Debré-effect, the changes of electric tension in solutions due to ultrasonic vibrations. His research includes a study on the absorption on fine precipitation of $BaSO_4$, the negative absorption of bentonite and ionic hydratation by H_2O and D_2O. In 1960 he studies the dynamic stability of the rotation of the Milky Way system, based on Maxwell's theory of the rotation of the rings of Saturn. This leads to an understanding of the spiral structure of the galaxies.
He contributes to many international symposia and in 1947 he is Franqui-professor at the University of Leuven.

Rutgers is a qualified lecturer who dialogues with his students and loves to answer their questions during the lectures.
"*Physische Scheikunde"* (1939) has become a standard book on physical chemistry and after a number of reprints is translated into English in 1954, with a preface by P. Debye.

In 1974 he obtains the title of emeritus professor and remains in Belgium till his health deteriorates and returns to the Netherlands (Almen) in 1996.