

30. ACKNOWLEDGMENTS

Although HSC Chemistry is a product of Outotec Research Oy (ORC), the development of many important calculation modules as well as the large database would not have been possible without the co-operation and help from other sources. I would like to express my deep gratitude especially to the following people who have played an important role in the development of HSC 7.0 and previous versions:

- Ahokainen Tapio, Helsinki Univ. of Tech.: Gas Radiation Calculator, HeatLoss-testing
- Andersin Erik, Outotec Oyj: Tpp-module (original code)
- Anttila Kai, ORC: EpH- and Tpp-modules
- Björklund Peter, Helsinki Univ. of Tech.: Balance-, HeatLoss- and Water-modules
- Eskelinen Jari, Helsinki Univ. of Tech. (HUT): GIBBS-routine
- Fine Alan, Russell W. Univ. of Kentucky: Lpp-module
- Haung H-H, Montana Tech.: EpH-module (original code)
- Lampinen Markku and Vuorisalo Jari, HUT: CELL- and other modules
- Mansikka-aho Jarkko, Satakunta Polytechnic: Graphics- and Help-routines
- Morris Arthur and Murphy D.P., Univ. of Missouri-Rolla: Lpp-module
- Shah N, Univ. of Kentucky: Lpp-module
- Syväjärvi Timo, Pyroprocess Ky: GIBBS-routine
- Talonen Timo, Outotec Research Oy: GIBBS-routine (original code)
- Taskinen Pekka, ORC: supervision, comments, ideas, G-conversion, etc.
- Teppo Osmo, HUT: modifications in SOLGASMIX-routine

Appreciation is also expressed to these who have made contributions to HSC database development. I am especially indebted to the following people:

- Jalkanen Heikki, Helsinki Univ. of Tech.
- Kobylin Petri, Helsinki Univ. of Tech.
- Kolhinen Tero, Helsinki Univ. of Tech.
- Koskinen Heli, Åbo Akademi
- Kujala Jukka, Pori School of Technology and Economics
- Liikanen Olli, Helsinki Univ.
- Lindström Matti, Tech. Univ. of Lappeenranta
- Nurminen Jaana, ORC
- Paloranta Matias, Univ. of Oulu
- Parpala Katja, Univ. of Joensuu
- Riikonen Päivi, Tech. Univ. of Lappeenranta
- Seppänen Jukka, Helsinki Univ. of Tech.
- Talonen Tarja, Univ. of Turku
- Taskinen Pekka, ORC
- Torikka Hanna, Univ. of Turku
- Öpik Andres, Tallinn Tech. Univ.

I am also especially grateful to Pekka Taskinen, Markku Kytö, Timo Talonen, Sigmund Fugleberg and Heikki Eerola for reviewing the manuscript and the program. I thank them for their many valuable comments and suggestions.

Antti Roine**August 10, 2006****09006-ORC-J**

Special thanks belong also to Prof. Erik Rosen of Umeå University for permission to use SOLGASMIX with HSC Chemistry and also to Osmo Teppo for gram modification. The algorithm has been originally written by Gunnar Eriksson in the Univ. of Umeå, Sweden.

Antti Roine

August 10, 2006

09006-ORC-J

The original GIBBS-solver has been written by Timo Talonen, Jari Eskelinen and Timo Syväjärvi. The CELL program was created by the following authors:

- Lampinen, M.J; Theory behind the program *)
 - Vuorisalo, J; Program *)
- *) Helsinki University of Technology, Department of Energy Engineering.

The PSD program was made by:

- Fine A. Russell W and Shah N, Univ. of Kentucky: Original code
- Morris A and Murphy, Univ. of Missouri-Rolla: Improvements

The Eh-pH-program is based on STABCAL - program - Stability Calculations for Aqueous Systems - developed by H.H. Haung, at Montana Tech., USA.

All the credits of successful marketing, sales and customer service of HSC Chemistry belong to Satu Mansikka.

Modification and integration of all the programs and database into HSC Chemistry software was carried out by Antti Roine.

The new Sim module development team is:

- Tuukka Kotiranta
- Pertti Lamberg
- Jarkko Mansikka-aho
- Jussi-Pekka Kentala
- Peter Bjorklund
- Tarja Talonen
- Antti Roine

Expertize of several other persons have also be utilize:

- Reijo Ahlberg
- Antti Grön
- Olli Saarinen
- Jorma Myyri
- Jussi Sipilä
- Asmo Vartiainen
- etc.