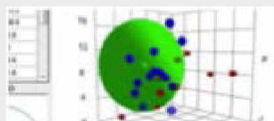


# Hansen Solubility Parameters(HSP) Application Notes

Pirika

JAVA, HTML5 &  
Chemistry Site

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Practice)  
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[Basic HSP  
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Polymer  
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## Hansen Solubility Parameters in Practice

Complete with software, data and  
examples

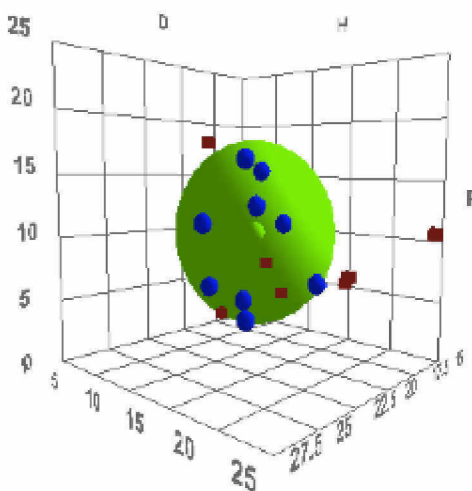
**Steven Abbott & Charles M. Hansen**

with

**Hiroshi Yamamoto**

&

**Richard S Valpey III (SC Johnson)**



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Book and Software Copyright ? 2008-13 Steven Abbott, Charles  
Hansen & Hiroshi Yamamoto

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**The HSPiP team**

[Chemical Engineering](#)  
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Ad Space for you

last update  
02-Feb-2013



Dr Hiroshi Yamamoto (right) officially joins the HSPiP development team (in his spare time!) as Dr Charles Hansen (left) handed over a signed copy of the Hansen Handbook. Professor Steven Abbott is holding the celebratory bottle of champagne.

## **HSP User's Forum**

### **e-Book Contents**

[Introduction & Guarantee by Steven Abbott](#)

Chapter 1 [The Minimum Possible Theory](#) (Simple Introduction)

Chapter 2 [The Sphere](#) (The Preferred Method of Visualizing)

Chapter 3 [Your first HSP Sphere](#) (Determining the HSP Sphere)

Chapter 4 [The Grid](#) (A different route to the Sphere)

Chapter 5 [Coming clean](#) (Finding Good Solvents)

Chapter 6 [Safer, Faster, Cheaper](#) (Optimizing Solvent Formulations)

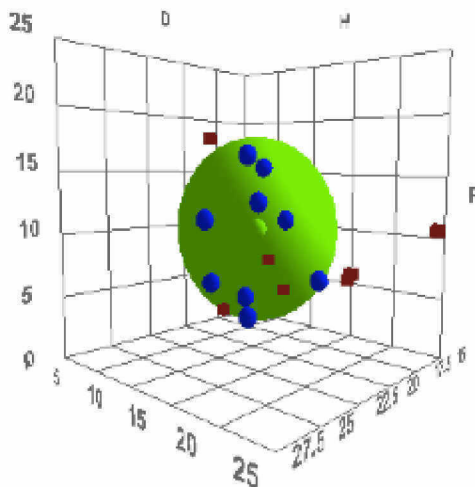
- Chapter 7 [Coming together](#) (Polymer Compatibility)
- Chapter 8 [Sticking, Flowing and Dissolving](#) (HSP and Adhesion, Viscosity and Dissolving)
- Chapter 9 [Shades of Black](#) (Designed Partial Compatibility - Bitumen)
- Chapter 10 [Insoluble solubility parameters](#) (HSP for Pigment Surfaces)
- Chapter 11 [Cracks in the system](#) (Environmental Stress Cracking)
- Chapter 12 [Let's make this perfectly clear ...](#) (Formulating clear automotive lacquers)
- Chapter 13 [That's swell](#) (HSP and Swelling)
- Chapter 14 [Paint failure – the science of blistering](#)
- Chapter 15 [Skin deep](#) (HSP and Skin Absorption)
- Chapter 16 [HSP and Diffusion](#)
- Chapter 17 [It's your call](#) (Rational Selection of Chemical Protective Gloves)
- Chapter 18 [Gloves: from minimum data to maximum insight](#) (Exploring Glove Permeation)
- Chapter 19 [Saving the planet](#) (Finding Improved Environmental Solutions)
- Chapter 20 [HSP for ionic liquids](#) (How to Assign HSP to New Materials)
- Chapter 21 [Cleaning by numbers](#) (HSP for Surfactants)
- Chapter 22 [Chromatography – HSP creator and user](#) (Retention Times and HSP)
- Chapter 23 [Noses artificial and natural](#) (HSP for Sensors Both Artificial and Live)
- Chapter 24 [Attacking DNA](#) (HSP for DNA , Drugs, and Biological Membranes Compared)
- Chapter 25 [HSP for Pharma and Cosmetic applications](#)
- Chapter 26 [Exploring with HSP –](#) (Generating and testing research hypotheses)
- Chapter 27 [Liquid extraction – a work in progress](#)
- Chapter 28 [The HSP of gel formation](#)
- Chapter 29 [Going nano](#) (HSP Characterizations of Nanoparticles)
- Chapter 30 [DIY HSP](#) (Methods to Calculate/Estimate Your Own HSP)
- Chapter 31 [Predictions](#) (Many Physical Properties are Correlated with HSP)
- Chapter 32 [Improvements?](#)

Chapter 33 [Into the 4th Dimension. Donor/Acceptor](#)

Chapter 35 [A Short History of the Hansen Solubility Parameters](#)

Chapter 36 [The next steps](#) (What Is Planned and Asked For)

## Hansen Solubility Parameters in Practice



### About the authors

**Professor Steven Abbott** is an independent technical software author and consultant in the areas of coating/printing/formulation and nano-science. He is a Visiting Professor at the School of Mechanical Engineering, University of Leeds. He has a PhD in Chemistry from Oxford University (but did the work for it at Harvard University) and has worked extensively in the coating and printing industries. His current research interests include environmentally safer solvents for the printing industry, bio-mimetic nanosurfaces and nanoparticle dispersions for high-performance coatings and practical skin permeation science.

**Dr Charles M. Hansen** is in a state of active semi-retirement working from his residence as consultant and author, having recently completed a second edition of *Hansen Solubility Parameters: A User's Handbook*, CRC Press, Boca Raton, 2007. He holds a B.Ch.E from the University of Louisville, an M.S. from the University of Wisconsin, and lic. techn. and dr. techn. degrees from the Technical University of Denmark. He has worked extensively with numerous organisations in the coatings, plastics, and related industries with employment by PPG Industries in the USA, and the Scandinavian Paint and Printing Ink Institute and FORCE Technology, both in Denmark.

**Dr Hiroshi Yamamoto** is a senior researcher at private company. He has a PhD from Nihon University "Molecular design of CFC alternatives using Chemo-Informatics" and has been a Visiting Associate at CalTech. His expertise includes neural networks and data mining for thermodynamic and chemical properties. Outside work he is "Senior Developer of HSPiP", "ChemNeuro" and his site,

[www.pirika.com](http://www.pirika.com) is widely used and referenced in the literature for its range of on-line Java-based predictors. His amazing work for HSPiP is all done in his spare time.

**Dr Richard S Valpey III** is Research Associate at SC Johnson Inc. He has a PhD in Organic Chemistry from The University of Rochester and has worked extensively with consumer products. His current research interests include environmentally friendly formulations for consumer products, liquid atomization and sprays, and aerosol science and technology.

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