

# Thermodynamic Software



# Training



A VLXE course program:

## Polymer and Solvent Modelling Using VLXE Blend

*(Level 1 course)*

When/where:

Spring 2016 in Houston, Texas

VLXE | **BLEND**<sup>®</sup>

[www.vlxe.com](http://www.vlxe.com)

VLXE Polymer and solvent modelling using VLXE Blend Course:

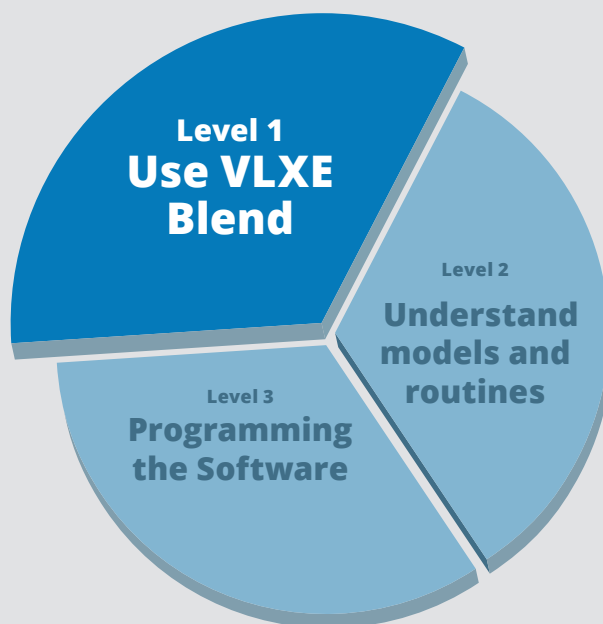
## Background

VLXE offers courses on three levels:

### Level 1: Use of VLXE Blend

**Level 2: (Advanced thermodynamic course)**  
Deep understanding of the models, equations and routines used in the above software package(s).

**Level 3: How to implement thermodynamic models and routines (programming course)**



The objective of this Level 1 course is to provide attendees with an in-depth knowledge of modelling polymer production with special emphasis on separation. The modelling of solvent, polymer, solvent/polymer and blend systems will also be covered.

## Who should attend?

The course should be attended by:

- Users of VLXE Blend, both beginners and experienced.
- Engineers who model solvent/polymer phase behavior.
- Academic researchers who need an in-depth understanding of solvent/polymer thermodynamics.
- Users of process simulation packages looking for a better understanding of polymer thermodynamics.

## Course content

**The course will combine lectures with hands-on exercises using VLXE Blend.**

**Elements of the syllabus include:**

### Lecture Material:

- Models and their parameters (PC-SAFT and coPC-SAFT).
- Fitting of parameters: solvent, polymer and copolymers.
- Match of polymer distribution.
- Effect of distribution on process modelling.
- Properties for pure solvent and polymers.
- Use of the VLXE Blend databases including DIPPR 801.
- Manage VLXE Projects.
- Creating calculations.
- Manage output.
- Phase diagrams.
- Link calculations in Excel
- Handle VLE, LLE and VLLE in flash and cloud point calculations.
- SLE.
- Fit parameters to data including polymer parameters.
- Systems with more than one polymer.
- Blends.

### Excel-based Exercises

- Create project sheet for a system with poly-disperse polymers.
- Manage project sheets.
- List of functions in VLXE Blend, create a new calculation using a wizard and manually.
- Manage calculation output, 1D and 2D.
- Handle units in calculations.
- Making use of the AdvUser argument in the VLXE Functions.
- Handle the association term both in and out-put.
- Calculate properties, Temperature/pressure, temperature/volume, Pressure/Volume.
- Handle flash and cloud point calculations.
- Calculate the entire phase diagram for a system with polymers.
- Trace lines of fixed properties in the phase diagram.
- Get data from DIPPR 801.
- Fit parameters including Kij values to 2 and 3 phase data.
- Add parameters to the VLXE Database.
- Link Calculations.

## Duration

The standard course requires 3 days.  
Duration can be adjusted to meet customer needs.

## Instructor

This course will be given by Dr. Torben Laursen, owner of VLXE. Dr. Laursen has more than 12 years of experience writing robust thermodynamics software applicable to highly complex systems. His clients include Afton Chemical, Chevron, ConocoPhillips, Dow Chemicals, Exxon-Mobil, Merck, NOVA Chemicals, Sabic, Sasol, Statoil, University of Dortmund, Rice University and others.

Subject to availability, guest lecturers from industry and academia will be invited to supplement course content with elements of their current research.

## Delivery

Spring 2016 in Houston, Texas.

## Enrollment Costs

The course fee is 2,500 Euro including lunch and course notes.  
Please contact [tl@vlxe.com](mailto:tl@vlxe.com) regarding method of payment and costs for custom courses available at your facility.

## Registration & Cancellation Policy

Registration including payment must be completed two weeks before course start. Full refund of course costs will be given for cancellation two weeks prior to the course start date.

Contact information:

### Postal Address

VLXE ApS  
Torben Laursen, Ph.D.  
Nordre Frihavnsgrde 13A, 2, tv  
2100 Copenhagen O  
Denmark

### Electronic Address

Cell phone +45 31 41 01 19  
E-mail [info@vlxe.com](mailto:info@vlxe.com)  
Homepage [www.vlxe.com](http://www.vlxe.com)  
Skype VLXE.Inc



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