



Revised: 09 July 2026

Virtual Classroom Catalog: gPROMS FormulatedProducts

Please find the current gPROMS FormulatedProducts virtual classroom schedule, along with descriptions of the available virtual classroom training offerings.

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Training dates

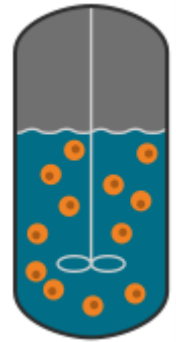
Dates	Training	Language	Time zone
There are no more virtual classroom training events scheduled in 2026 for this product. Please keep an eye out for an updated timetable for 2027 and marketing communications regarding campaign specific training events. If you'd like to request a virtual classroom training, please send an email to gproms.training.digital@siemens.com with the training you require, preferred dates, and the number of participants.			

Training descriptions

Bioreactors [Available in English/Japanese]

Bioreactor processes are the upstream production workhorses for many formulated products industries (e.g. biopharmaceutical, food, beverage and specialty chemicals). Process development is a significant task due to the inherent biological variability, large decision space, limited material availability and constricted timelines.

Bioreactor science-based digital twins can bring value to businesses across R&D, engineering, and manufacturing functions through digital design and optimization, risk assessment, design space exploration and scale up/tech transfer. The result is accelerated innovation with faster time-to-market, improved process and product design, enhanced operations, more efficient and effective R&D and experimental programs, and better-managed risk.



This introductory virtual training covers the use of Siemens' bioreactor model libraries in gPROMS FormulatedProducts. During the training attendees will learn the capabilities of the tool through guided hands-on exercises, presentations and video demonstrations. Attendees will gain hands-on experience configuring and calibrating a mechanistic bioreactor model using experimental data. Then they will learn how to perform optimization to determine promising operating conditions to explore further. The last exercise will cover how global system analysis can be used to assess the system's sensitivity to a wide range of process parameters, including feeding schedule and seeding variability.

Chromatography [Available in English]

Chromatography processes are the downstream purification workhorses for many formulated products industries. They are the most expensive sections of the manufacturing process and are often the processing bottleneck. Process development is a significant task due to the large decision space, limited material availability and constricted timelines. Inherent variability in feed streams, high purity constraints, and maintenance issues such as resin fouling pose additional challenges.

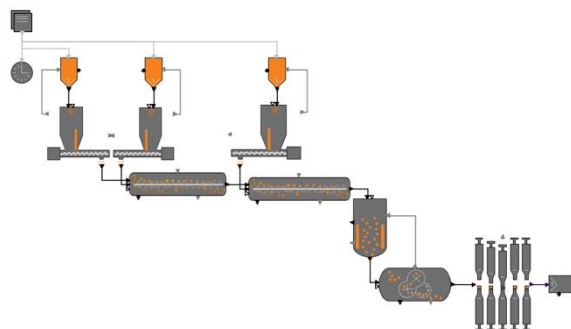
Chromatography science-based digital twins can bring value to businesses across R&D, engineering, and manufacturing functions through digital design and optimization, risk assessment, design space exploration and scale up/tech transfer. The result is accelerated innovation with faster time-to-market, improved process and product design, enhanced operations, more efficient and effective R&D and experimental programs, and better-managed risk.



This introductory virtual training covers the use of Siemens' chromatography model libraries in gPROMS FormulatedProducts. During the training attendees will learn the capabilities of the tool through guided hands-on exercises, presentations and video demonstrations. Attendees will gain hands-on experience configuring and calibrating a mechanistic chromatography model using experimental data. Then they will learn how to perform a global system analysis to assess the system's sensitivity to a wide range of process parameters, including elution settings and load variability. The last exercise will cover how mechanistic models can be used to de-risk the move from a batch to a continuous chromatography process.

Continuous direct compression [Available in English]

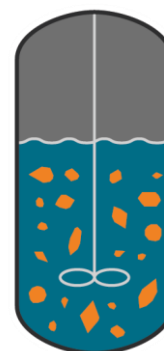
Our continuous direct compression training session will help attendees get acquainted with Siemens and gPROMS FormulatedProducts. Learn how our feeder and blender models have been applied in the industry, while getting hands-on experience simulating continuous direct compression systems, and instruction and discussion on how to interpret the results generated from the models.



Learn how to use experimental data to estimate model parameters which cannot be directly measured. The calibrated unit operation models will be integrated into a system model that tracks disturbances through the process and assesses the risk associated with process variability. An automated series of simulations using our Global System Analysis (GSA) tool will be used to virtually explore the design space and assess the impact of the validated system's sensitivity to a range of process parameters.

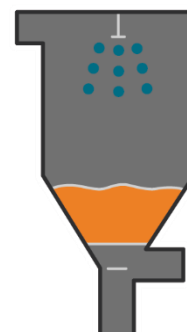
Crystallization [Available in English/Japanese]

During the crystallization training, attendees will learn the capabilities of unit operation and kinetic models included in our crystallization model libraries and receive hands-on instruction using the models to simulate a batch cooling crystallization system. Experimental data will be used to estimate crystallization kinetic parameters, along with instruction on how to interpret the results of a parameter estimation and understand the impact of uncertainty in experimental measurements and its effect on the confidence of the estimated parameters and subsequently on the confidence in predictions from the validated crystallization model. Attendees will gain hands-on experience using gPROMS FormulatedProducts to perform a global system analysis to automatically assess the validated system's sensitivity to a wide range of process parameters, including seed mass and particle size distribution. After attending this training, you will be able to start applying the crystallization model libraries to your own projects.



Fluid bed granulation [Available in English]

Our fluid bed granulation (FBG) training session will help attendees get acquainted with Siemens and gPROMS FormulatedProducts. Learn how our FBG model has been applied in the industry, while getting hands-on experience configuring a FBG system, and instruction and discussion on how to interpret the results generated from the models. Learn how to use experimental data to estimate model parameters which cannot be directly measured. An automated series of simulations using our Global System Analysis (GSA) tool will be used to virtually explore the design space and assess the impact of the validated sensitivity of key product properties to a range of process parameters.



gWAP end user training – Formulation manufacture [Available in English]

Users will become more familiar with the use of web applications for simple calculations to support pharmaceutical process development. You will have the opportunity to explore three different gPROMS Web Applications.



- Content uniformity: evaluate the relative standard deviation of API in a tablet from particle size distribution and dosage levels.
- Cooling crystallization: examine KPI's through exploring process conditions such as agitation, see type and cooling profile.
- Roller compaction: analyse the impact of equipment conditions on the ribbon density, porosity and throughput.

gWAP end user training – Spray drying [Available in English]

Spray drying is one of the most convenient and frequently used techniques for dehydrating dairy products. In fact, milk powder was the first commercial commodity made using industrial scale spray dryers. The removal of water from milk and whey helps prevent microorganism growth and preserves the product for later consumption. The physiochemical and microbiological properties of the final product are heavily influenced by the operating conditions implemented during spray drying. Spray drying of high lactose feeds are prone to increased stickiness leading to operational problems such as fouling and low product yield. The sticky behavior can be captured using mechanistic models to achieve successful drying.



A spray drying science-based digital twin can bring value to businesses across R&D, engineering, and manufacturing functions through digital design and optimization, risk assessment, design space exploration and scale up/tech transfer. Customers have used this digital twin to reduce energy requirements, avoid fouling, and downtime due to cleaning, as well as increase production capacity by 1-2 days per year.

This introductory virtual training covers the use of Siemens' easy-to-use multi-stage drying web application using the gPROMS Web Applications Platform. No prior modelling experience is required. During the training attendees will learn the capabilities of the tool through guided hands-on exercises, presentations, and video demonstrations. Attendees will gain hands-on experience using this web application to calibrate the model, predict product drying and stickiness and identify optimal operating conditions. The impact of altering feed flow, inlet and outlet air temperatures on product quality will be explored, as well as throughput optimization of sticky and non-sticky formulas.

Oral Absorption [Available in English/Japanese]

Our oral absorption training session will introduce users to the product performance libraries of gPROMS FormulatedProducts. Attendees will learn how molecular properties are stored and used by the model as they work through a series of hands-on sessions. Basic simulations will be performed on a non-ionizing compound and then an acidic or basic compound and finally a salt compound with emphasis on how to adjust formulation parameters, physiological conditions, and navigating and interpreting the auto generated reports.

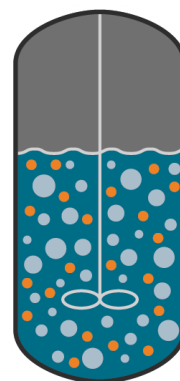


Attendees will then learn how to perform model validation to calibrate molecular properties from experimental data and understand how well the framework corresponds to what can be observed in the lab. Finally, attendees will learn how to use the Global System Analysis feature to create a virtual design space in which to explore the impact of uncertainty and physiological variance on expected absorption. After attending this training, you will be able to start applying the product performance model libraries to your own projects.

Reaction-hydrogenation [Available in English]

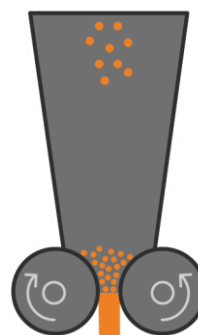
During this training, attendees will learn the capabilities of the reaction model libraries in gPROMS Formulated Products and receive hands-on instruction on using the multiphase CSTR model to simulate a hydrogenation reaction system.

Experimental data will be used to estimate the kinetic parameters and establish a reaction mechanism, along with instruction on how to interpret the results of a parameter estimation and assess confidence in the estimated parameters and model predictions. Attendees will also gain hands-on experience performing Global Systems Analysis (GSA) on the validated model to explore the design space, and automatically assess the sensitivity of Key Performance Indicators (KPIs) like conversion and yield to a wide range of process parameters, including operating pressure, temperature and initial concentrations. After attending this training, you will be able to start applying the reactor model libraries to your own projects.



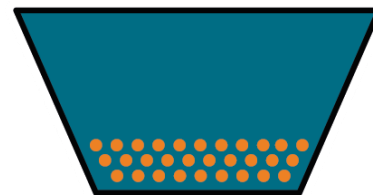
Roller compaction [Available in English]

Our dry granulation training session will help attendees get acquainted with Siemens and gPROMS FormulatedProducts. Learn how our roller compaction models have been applied in industry and use our libraries and templates to build your own drug product manufacturing process model. Attendees will get hands-on experience building their own flowsheets and configuring drug product material systems, and instruction and discussion on how to interpret the results generated from the models. Learn how to create templates to automatically import data from Excel spreadsheets then use this data to estimate model parameters which can't be directly measured. The results of these model validations will be interpreted to understand the confidence in predictions. An automated series of simulations using our Global System Analysis (GSA) tool will be used to assess the impacts of the model's sensitivity to changes in process parameters.



Solar ponds [Available in English]

The process of brine mining and salt extraction using solar evaporation ponds is subject to high levels of uncertainty as a result of variability in climate and/or process conditions. The most efficient yet comprehensive approach to analyse and mitigate these sources of variability on the process yields involves a digital process twin built using mechanistic models.

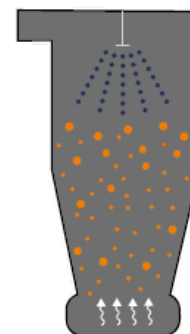


Siemens is a leading supplier of Advanced Process Modeling software and services to the process industries. With the guidance of companies with major solar pond operations, Siemens has developed a library of models for modeling solar evaporation network processes. The dynamic solar evaporation pond model, which takes into account rigorous handling of physical properties for electrolyte systems, can be used to study the effect of the variations in climate and solar radiations throughout the year on the evaporation of the brine and the precipitation of target salts. This mechanistic model library is built on Siemens' Advanced Process Modeling environment, gPROMS FormulatedProducts, which provides users with the necessary tools to create the digital twin of the process and then deploy it for off-line and on-line usage.

During this training, attendees will explore the capabilities of the solar evaporation pond model libraries in gPROMS FormulatedProducts and get hands-on experience using the models to simulate a solar evaporation pond network process. The course will cover flowsheeting and simulation, model calibration using process data, and uncertainty analysis using the Global System Analysis (GSA) tool in gPROMS FormulatedProducts to model the effect of uncertainty in the climate conditions on the salt production. This training is ideal for beginners in the mining industry new to the gPROMS platform as well as those interested in better understanding the solar pond libraries.

Spray drying for dairy industries [Available in English]

Spray drying is one of the most convenient and frequently used techniques for dehydrating dairy products. In fact, milk powder was the first commercial commodity made using industrial scale spray dryers. The removal of water from milk and whey helps prevent microorganism growth and preserves the product for later consumption. The physiochemical and microbiological properties of the final product are heavily influenced by the operating conditions implemented during spray drying. Spray drying of high lactose feeds are prone to increased stickiness leading to operational problems such as fouling and low product yield. The sticky behavior can be captured using mechanistic models to achieve successful drying.

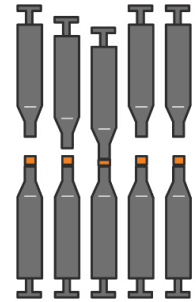


A spray drying science-based digital twin can bring value to businesses across R&D, engineering, and manufacturing functions through digital design and optimization, risk assessment, design space exploration and scale up/tech transfer. Customers have used this digital twin to reduce energy requirements, avoid fouling, and downtime due to cleaning, as well as increase annual production capacity.

This introductory virtual training covers the use of Siemens' spray drying model libraries in gPROMS FormulatedProducts. During the training attendees will learn the capabilities of the tool through guided hands-on exercises, presentations, and video demonstrations. Attendees will gain hands-on experience configuring and calibrating a mechanistic spray dryer model using experimental data. They will learn how to predict product drying and stickiness and will use Global System Analysis (GSA) to assess the sensitivity of such outputs to process parameters such as air temperature and flow rate. The final exercise will cover how to perform optimization to determine optimal operating conditions to maximize spray dryer throughput.

Tableting [Available in English]

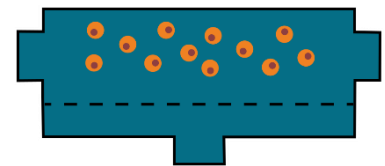
This training session will focus on the workflow behind the digital design, calibration and application of a tablet compaction model. By completing the training, you will become familiar with fundamental gPROMS platform features and the tablet press model within the gPROMS FormulatedProducts environment. The training has an emphasis on hands-on activities, where you will learn how to set-up and simulate tablet compaction models from scratch. You will be guided through the process of using experimental data to estimate parameters in order to calibrate your model so that it can predict the impact of blend composition on key tablet attributes.



Our Global System Analysis (GSA) tool will be used to virtually explore the design space by running hundreds of model instances to assess the impact of the model's sensitivity to a range of process parameters. In addition, your trainer will explain how the model can be extended to account for the effect of blend lubrication on the critical quality attributes of the tablet. Finally, you will be shown how this calibrated unit operation model can be integrated into a dry granulation line to enhance process understanding and assess the trade-offs between dry granulation and direct compression.

Tangential flow filtration [Available in English]

Tangential flow filtration (TFF) processes are widely used in the life sciences industries to rapidly and efficiently separate and purify biomolecules. Ultrafiltration – diafiltration (UF/DF) steps are commonly used towards the end of the downstream process for buffer exchange and concentration of biological products prior to finish and fill.



Tangential flow filtration science-based digital twins can bring value to businesses across R&D, engineering, and manufacturing functions through digital design and optimization, risk assessment, design space exploration and scale up/tech transfer. The result is accelerated innovation with faster time-to-market, improved process and product design, enhanced operations, more efficient and effective R&D and experimental programs, and better-managed risk.

This introductory virtual training covers the use of Siemens tangential flow filtration model libraries in gPROMS FormulatedProducts. During the training attendees will learn the capabilities of the tool through guided hands-on exercises, presentations and video demonstrations. Attendees will gain hands-on experience configuring and calibrating a mechanistic TFF model for UF/DF using experimental data. Then they will learn how to perform optimization to determine promising operating conditions to explore further. The last exercise will cover how global system analysis can be used to assess the system's sensitivity to a wide range of process parameters, including feeding schedule and seeding variability.