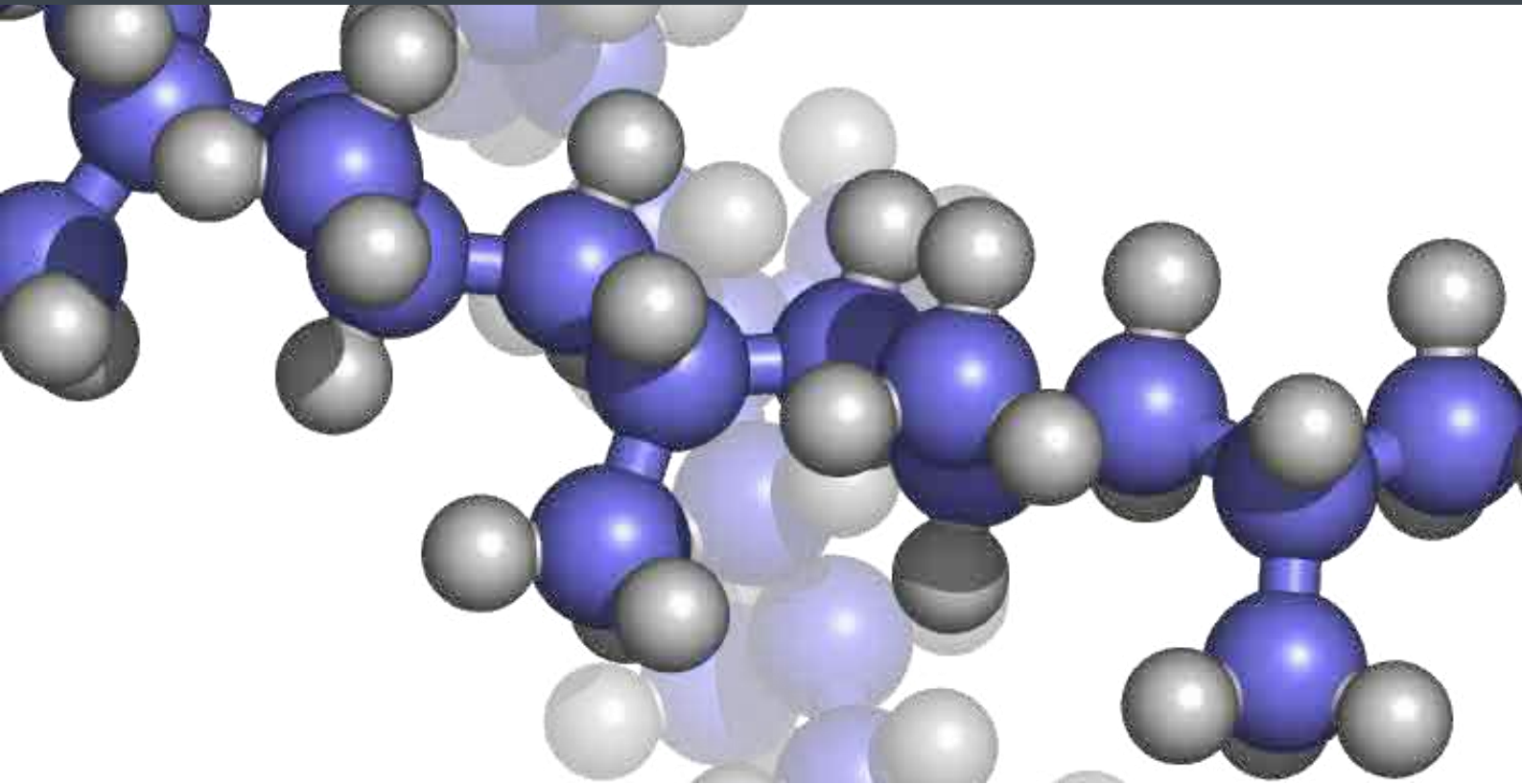


BIMS 2 :

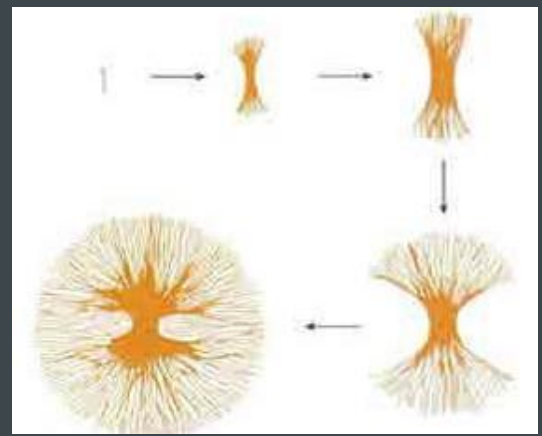
Understanding mechanical properties of thermoplastics

November 21 – 22, 2024



DETAILS | AGENDA

The seminar's objective is to introduce the participants to the unique and complex field of mechanical response of macro-molecular materials.



Rather than piling a large amount of information to try to describe the huge diversity of mechanical behavior observed in such materials as amorphous, crystalline, filled or unfilled polymers, the BIMS 2 training session will focus on the fundamental physics behind the phenomena involved in solid state mechanical performance, deformation and failure of polymers and their composites.

This will give the audience a holistic view of the behavior of thermoplastics and will allow them to deepen their knowledge in their preferred fields of interest through additional reading or courses.

The goal of the two day's session is to make sure that all participants leave the course with a much better general knowledge of the field, which will help them to communicate with specialists, material scientists, mechanical designers or CAE experts attempting to predict plastic part performance.

Participants could be:

__ design or mechanical engineers working with plastics __ molders interested in part performance
__ professionals interested in plastic part failure mechanisms __ FEA specialists __ project leaders involved in developing plastic parts __ research engineers interested in polymer performance __ material specialists or designers wishing to improve their understanding of mechanical performance __ students involved in the field of polymers __ young, skilled professionals with limited experience in the field __ professionals looking for a fresh view on polymer mechanical performance __ flow analysis specialists wishing to extend their knowledge __ customer support engineers __ scientists ...



Dr. Vito LEO

More than 30 years experiences in
polymer processing and physics process



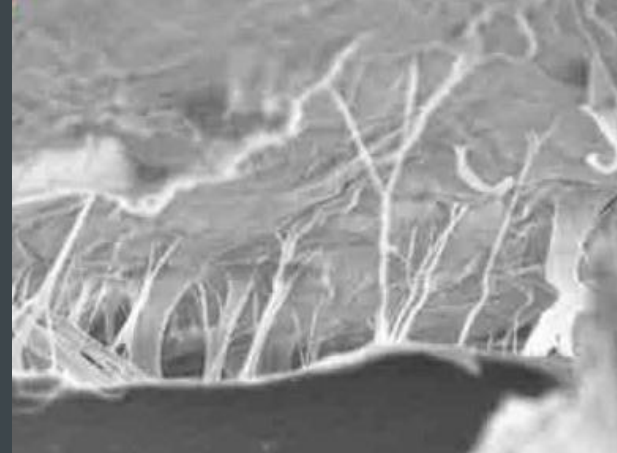
Dr. Vito LEO is a physicist by training, and has been working for more than 30 years in the field of polymer processing and physics. He has been particularly active in the field of injection molding of thermoplastics and the use of finite element numerical simulation of this process, and currently works more in the field of mechanical performance of plastics.

Vito Leo worked for the largest chemical company in Belgium supplying the biggest portfolio of engineering polymers and compounds in this industry. He also taught a second Master's course at Brussels University, to students of the engineering faculty. Today he is very happy to being able to devote himself fully to his favorite hobbyhorse, sharing his knowledge and explaining scientific backgrounds and theories in order to make everyday work easier for all those who deal with plastics on daily basis.



This seminar will focus on the complex mechanical performance of plastics to introduce the key behavior of these unique materials (visco-elasticity, nonlinearity, creep, impact, failure mechanisms).

The teaching material (over 200 slides) provides an in depth introduction in the field of plastic mechanical performance.



CONTENT

After attending the seminar, we expect the participants to have a fairly good answer to many typical questions that often come-up when dealing with plastics, like, for instance:

- __ Why does the modulus of plastics change so much with temperature?
- __ Why is this change so different from one polymer to another?
- __ Why do amorphous polymers generally fail in a brittle way in long term tests or impact?
- __ Why do some still perform quite well in these conditions?
- __ Why do we have such a thing as a “brittle-ductile” transition in polymers? What is it exactly?
- __ Why are some polymers ductile at some test rates and brittle at lower as well as higher strain-rates?
- __ Why is the test “timing” so important for plastics?
- __ Why does plastic performance change so much with processing conditions, even when unfilled, and even when amorphous?
- __ Why do polymers “age”? What does this mean and what are the implications on performance?
- __ What are the mechanisms behind rubber reinforcement?
- __ Why is the morphology of these blends so critical?
- __ Why do we need to tailor the formulations to every specific polymer?

The seminar will be highly interactive, with limited attendance, allowing for questions, group discussions and analysis of the attendant problems. Parts or drawings are welcome for open discussion, when possible.

BIMS 2

Understanding mechanical properties of thermoplastics

AGENDA

Day 1

November 21, 2024

- 10.00 Welcome
 - Stress-strain response of polymers
 - Time-temperature effects – Viscoelasticity
- 11.15 Coffee Break
- 11.30 Effects of crystallinity
 - 3D aspects of the stress field
 - Notch effect and stress concentration
- 13.00 Lunch
- 14.00 Craze phenomena in polymers
 - ESC – Environmental Stress Cracking
 - Fatigue behaviour of polymers
- 15.15 Coffee Break
- 15.30 Creep behaviour of polymers
 - Physical ageing of polymers
 - UV degradation and moisture effects

18.00 End of day 1

19.30 Dinner

Day 2

November 22, 2024

- 8.30 Rubber reinforcement
 - Effect of flow on toughness
- 10.00 Coffee Break
- 10.15 Fiber filled polymers
 - Digmat
- 12.00 Lunch
- 13.00 Residual stresses and weldlines
 - Seminar conclusions
- 15.00 End of the seminar

Remark: The start Times and Order of the different chapters are just an orientation. Please be aware that they may change.

Are you interested?

Use the opportunity to better understand the complex interacting phenomena during injection molding and register now.

BIMS 2 « Understanding mechanical properties of thermoplastics »:

DATES: November 21 & 22, 2024 in Ghent University, Belgium

REGISTRATION:

1,600€ HT

The fee includes the lessons, training material, food and beverages during both days, and additionally a dinner on the first evening for one person.

Please fill in the form below and send an e-mail to l.buchy@simpatec.com

REMARK:

The seminar will be open to a minimum of 10 and a maximum of 20 participants. Please do not forget to Timely organize your accommodation by yourself.

CANCELLATION :

Cancellations received 30 days or more before the seminar will be refunded in full.

No refund for cancellations received later than the 30 days

Participant / Contact person

Company

Address

ZIP Code / City

Phone / fax

Email

REGISTRATION