

Final Program



8 - 12 April 2018
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Contents

| | |
|--|-----------|
| General Information | 4 |
| Badges..... | 5 |
| Best Paper Award..... | 8 |
| Conference Location | 4 |
| Conference Proceedings | 6 |
| How to get there | 4/5 |
| Internet Connection | 6 |
| Meeting Room | 6 |
| Need Help?..... | 6 |
| Paper Legend | 8 |
| Registration..... | 6 |
| Social Events and Lunches | 6/7 |
| Tickets..... | 5 |
| | |
| Quick Program Overview..... | 9 |
| Sunday Registration and Get Together Party | 12 |
| Welcome Address..... | 13 |
| | |
| Scientific Program | 12 |
| | |
| Sunday, April 8..... | 12 |
| Monday, April 9 | 13 |
| Tuesday, April 10 | 17 |
| Wednesday, April 11 | 23 |
| Thursday, April 12 | 28 |
| Poster Presentations..... | 29 |
| | |
| FOODSIM'2020 | 30 |
| | |
| Conference Location | 31 |
| | |
| Notes..... | 34 |
| | |
| Registration Form | 35 |
| | |
| EUROSIS Contact Info | 36 |

General Information

1.1 Conference Location


The Conference itself is held at



[KU Leuven Technologicampus
Gent](#)

**BUILDING D & E - ROOMS D002
and E033**

Gebroeders de Smetstraat 1
9000 Ghent

 Tel: +32.9 265 86 10

 Email: iiv.gent@kuleuven.be

See the [Campus map](#) for more
info at the back of the program.

The meeting rooms are in the building located to the right of the main entrance of the campus. (the way to the meeting rooms will be signposted) Registration will start on Sunday at 5.00 p.m. and end at 7.00 p.m. On Monday and Tuesday from 8.00 a.m. till 5.00 p.m. On Wednesday from 8.30 a.m. till 4.00 p.m. The registration desk will be located in the staff room **D006A** in the same hallway as the meeting room in **Building E**.

Reaching KU Leuven Technology Campus Ghent

By Plane:

Ghent lies some 40 km to the west of the airport of Brussels and some 70 kms from Charleroi-(Brussels South Airport). See below how to get reach Ghent from these different airports.

On arrival at [Brussels Airport](#), probably with [Brussels Airlines](#) take a train towards Brussels, where you can change trains for Ghent at either Brussels North, Central or South (Midi). At each of these stations you can take the IC-Train either to Ostend, Knokke-Blankenberge or De Panne and exit in Ghent Sint-Pieters station. First stop after Brussels. (travel time approx. 35 mins)

From [Charleroi airport](#) you can take a bus to Charleroi Station. From there you take the train to Brussels South and change trains there for Ghent. At this station you can take the IC-Train either to Ostend, Knokke-Blankenberge or De Panne and exit in Ghent Sint-Pieters station. First stop after Brussels. (travel time approx. 35 mins)

By Train:

From Germany see the [German Railway Information Site](#) and also check the information on the [ICE train](#) from Cologne to Brussels.

From London see the [EUROSTAR Information Site](#) for information on trains between London and Brussels.

From Paris see the [THALYS Information Site](#) for information on trains between Paris and Brussels.

General Information

From Amsterdam see the [THALYS Information Site](#) for information on trains between Amsterdam (Schiphol Airport) and Brussels. If you take this train then you can also change trains in Antwerp and take the Ostend or Lille bound trains to reach Ghent Sint-Pieters station.

More information about timetables of [trains in Belgium](#).

By Tram:

Ghent has an excellent network of trams and busses run by the [De Lijn](#) company which cover everywhere you could wish to go. You can buy tickets from De Lijn offices, some newsagents, automated ticket machines at the bus/tram stops, by SMS or from the driver. The single ticket of 3 Euro will give a timed price of 60 minutes within which you can make unlimited changes. You can also purchase a Lijn card at De Lijn offices, presale points or automated ticket machines at a price of 16 Euro valid for 10 single 60-minutes trips. Each time you get on or transfer, you must validate your ticket. There are also daypasses valid for 1 day (6 Euro presale or 8 Euro on bus or tram), 3 days (12 Euro presale), and 5 days (17 Euro presale). These also must be validated at the start of the first journey. The machines are quite simple to use and those at the train station have several language options. Payment can be credit/debit card or cash and the machines give change for notes up to 10 Euro.

To view the tram network go to this [webpage](#). The tram to take from Ghent Sint-Pieters station is line 4 direction Moscou or line 1 direction Evergem. Please note both trams leave from different tram stops at the train station. The stop to get off is Rabot.

By Bus:

You can reach Ghent from anywhere in Europe by [EUROLINES](#). The EUROLINES coach stops at Ghent St.Pieters Station and at Ghent Dampoort. Within to use a bus Ghent see the information on [De Lijn](#) website.

ALL OTHER MAPS ARE AT THE BACK OF THIS PROGRAMME

1.2 Badges

Each registrant will receive a name badge upon registration. The badge must be worn in order to be admitted to the technical sessions, lunches and social event.

1.3 Tickets

Extra tickets for the social event and lunches are available from the Registration desk. (**at conference prices**)

Price: (or equivalent in another currency) for extra tickets. All participants will be issued with tickets for lunch and the conference dinner. **Or just the badge will apply.**

General Information

| | |
|--------------------|------------|
| walking dinner | € 45 |
| conference dinner: | € 80 |
| lunch | € 25/lunch |
| conference visit | € 20 |

1.4 Registration

The **FOODSIM'2018** Registration Desk will be open for information and registration in the **staff room D006A** at the end of the hallway **BUILDING E** in the same hallway as the meeting rooms:

| | |
|--------------------------|-------------------------|
| Sunday, April 8..... | 5.00 p.m. to 07.00 p.m. |
| Monday, April 9..... | 8.00 a.m. to 05.00 p.m. |
| Tuesday, April 10..... | 8.00 a.m. to 05.00 p.m. |
| Wednesday, April 11..... | 8.30 a.m. to 04.00 p.m. |

1.5 Conference Proceedings

Each fully paid registrant will be provided with a copy of the Conference Proceedings (printed format). (Extra copies are available on a **cash and carry** basis at special rates during FOODSIM-2018). Price: (or equivalent in another currency) for an extra copy

| | |
|--------------------------|------|
| FOODSIM'2018 Proceedings | € 50 |
|--------------------------|------|

Other Proceedings can be ordered from the EUROSIS website.

1.6 Meeting Rooms

The meeting rooms are rooms **D-002** and **E-033**, located to the right of the main entrance of the University entrance in **BUILDING E**. Directions to the rooms will be signposted. The welcome address takes place in room **E-036 (GROOT AUDITORIUM)**.

1.7 Internet Connection

There is full free WIFI at the conference site. Participants are advised to log in using their EDUROAM account. Additional guest accounts will be provided.

1.8 Need Help?

Please see the conference desk in **ROOM D006A** for your questions

1.9 Social Events and Lunches

All registrants are invited: To the **Get-Together Party** on **Sunday April 8th**. **Coffee Breaks** and the **lunches** for 3 days and the **Walking Dinner** on **Monday the 9th of April**, which will all be served in the main exhibition area in **BUILDING B**.

General Information



[KU Leuven Technologicampus
Gent](#)

Gebroeders de Smetstraat 1
9000 Ghent

Tel: +32.9 265 86 10

To the Conference Dinner



The conference dinner will be held on Wednesday the 11th of April in the evening at the [Restaurant Lof](#), Hoogstraat 36 9000 Gent

Tel: +32. 9.235.40.71

<http://www.lof-restaurant.com/restaurant-lof-en.html>

To the Conference Concert by Evelyne Lutton and Jan Van Impe



Which will be held on Tuesday April 10th in Sint-Baafs Cathedral, Ghent

To the Conference Visit



The conference company visits are scheduled for Thursday the 12th of April from 09.00 to 15.00 to (optional at extra cost - limited spaces available only) either:

Brewery St. Feuillien

<http://www.st-feuillien.com/en/>

Brewery Van Honsebrouck

<https://www.vanhonsebrouck.be/>

Brewery Eutropius

<https://www.brouwerij-eutropius.be/en/beers/st-tabarnak>

General Information

1.10 Best Paper Award

During the conference the papers, which were accepted as extended papers will be judged by the committee and participants in order to choose the best paper of the FOODSIM'2018 conference. The best paper candidate receives a certificate signed by the General Conference and Program Chairs and also a free registration to any EUROSIS conference within 2 years of receipt of the prize.

1.11 Paper Legend:

Each paper is assigned a number code. This code has to be entered on the form for the best paper award.

The room has an LCD projector and an overhead projector

SESSION CHAIRPERSONS

ALL SESSION CHAIRPERSONS IN THIS PROGRAM ARE PROVISIONAL.

Session Chairs are chosen on a voluntary basis by proposals by either authors or local committee members or are appointed by the Track Chairs, General Program Chair or General Conference Chair. They are responsible for their assigned session. They make sure their speakers are available, take care of the timing within the session, chair the discussion after each presentation and introduce each speaker based on the CV'ss given to them by the authors.

Sessions with extended papers: If you are a session chair in a session with extended papers make sure the session participants have a copy of the Best Paper Award Form and ask them to return them to you at the end of the session. After the session hand over the collected forms to Philippe Geril.

THE NUMBERS NEXT TO THE PRESENTATIONS DENOTE THE PAGE-NUMBERS IN THE PROCEEDINGS. IF NO NUMBERS ARE MENTIONED THEN THIS PAPER IS NOT PUBLISHED IN THE PROCEEDINGS

THE AUTHORS WHO ARE UNDERLINED ARE NORMALLY THE PRESENTERS

ONLY PAPERS IN BROWN BOXES ARE THE EXTENDED PAPERS ELIGIBLE FOR THE BEST PAPER AWARD

| | |
|--|---|
| SUNDAY, 8th APRIL 2018 | |
| 17.00-19.00 | REGISTRATION STAFF ROOM D006A HALLWAY BUILDING E |
| 17.00-21.00 | GET-TOGETHER-PARTY EXHIBIT AREA BUILDING B |
| MONDAY, 9th APRIL 2018 | |
| 08.00-17.00 | REGISTRATION STAFF ROOM D006A HALLWAY BUILDING E |
| 09.00-09.30 | GROOT AUDITORIUM BUILDING E ROOM E-036 |
| | INTRODUCTION TO FOODSIM 2018 & TRENDS IN BREWING 2018 |
| 09.30-10.30 | KEYNOTE SESSION BUILDING E |
| | ROOM A E-033 |
| | KEYNOTE SPEAKER BAS TEUSINK |
| 10.30-11.00 | COFFEE BREAK |
| 11.00-12.00 | SESSION BUILDING E |
| | ROOM A E-033 |
| | MULTI-SCALE MODELLING METHODS I |
| 12.00-13.00 | LUNCH BREAK |
| 13.00-15.30 | SESSION BUILDING E |
| | ROOM A E-033 |
| | MULTI-SCALE MODELLING METHODS II |
| 15.30-16.00 | COFFEE BREAK |
| 16.00-18.00 | SESSION BUILDING E |
| | ROOM A E-033 |
| | MODELLING AND SIMULATION IN FOOD PRODUCTS |
| 18.00-18.30 | MAIN HALL BUILDING B - Welcome by Daniel Termont, Mayor of the City of Ghent and Luc Sels, Rector KU Leuven |
| 18.30-21.00 | MAIN HALL BUILDING B: DRINK AND WALKING DINNER IN THE EXHIBITION AREA |

| TUESDAY, 10th APRIL 2018 | | |
|--|--|--|
| 08.00-17.00 | REGISTRATION STAFF ROOM D006A HALLWAY BUILDING E | |
| 08.30-10.00 | KEYNOTE SESSION BUILDING E | |
| | ROOM A E-033 | |
| | KEYNOTE SPEAKER NATHALIE PERROT AND POSITION PAPER | |
| 10.00-10.30 | COFFEE BREAK | |
| 10.30-12.00 | PARALLEL SESSIONS BUILDING E | |
| | ROOM A E-033 | ROOM B D-002 |
| | MODELING AND SIMULATION IN FOOD PROCESS SYSTEMS ENGINEERING I | MODELING AND SIMULATION IN FOOD SAFETY AND SPOILAGE I |
| 12.30-13.00 | LUNCH BREAK | |
| 13.00-15.00 | PARALLEL SESSIONS BUILDING E | |
| | ROOM A E-033 | ROOM B D-002 |
| | MODELING AND SIMULATION IN SUSTAINABLE FOOD SYSTEMS ENGINEERING | MODELING AND SIMULATION IN QUANTITATIVE RISK ASSESSMENT |
| 15.00-15.30 | COFFEE BREAK | |
| 15.30-17.00 | PARALLEL TUTORIALS AND WORKSHOP BUILDING E | |
| | ROOM A E-033 | ROOM B D-002 |
| | TUTORIAL AND SOFTWARE TOOLS DEVELOPED @ KU Leuven/BioTeC+ | FOOD PROCESS MODELING AND PRODUCTION SCHEDULING USING SuperPro Designer & SchedulePro |
| 17.00 –18.30 | PARALLEL TUTORIALS AND WORKSHOP BUILDING E | |
| | ROOM A E-033 | ROOM B D-002 |
| | FOOD PROCESS MODELING AND PRODUCTION SCHEDULING USING SuperPro Designer & SchedulePro | TUTORIAL AND SOFTWARE TOOLS DEVELOPED @ KU Leuven/BioTeC+ |
| 19.15-20.15 | Concert in Sint-Baafs Cathedral, Ghent, by Evelyne Lutton, INRA and Jan Van Impe, KU Leuven | |

| WEDNESDAY, 11th APRIL 2018 | |
|--|---|
| 08.00-16.00 | REGISTRATION STAFF ROOM D006A HALLWAY BUILDING E |
| 08.30-10.00 | KEYNOTE SESSION BUILDING E |
| | ROOM A E-033 |
| | KEYNOTE SPEAKER ANET REŽEK JAMBRAK & FLASH PRESENTATIONS |
| 10.00-10.30 | COFFEE BREAK AND POSTER SESSION D002 |
| 10.30-12.00 | PARALLEL SESSIONS BUILDING E |
| | ROOM A E-033 |
| | ROOM B D-002 |
| | MODELING AND SIMULATION IN FOOD PROCESS SYSTEMS ENGINEERING II |
| | MODELING AND SIMULATION IN FOOD SAFETY AND SPOILAGE II |
| 12.00-13.00 | LUNCH BREAK |
| 13.00-15.00 | PARALLEL SESSIONS BUILDING E |
| | ROOM A E-033 |
| | ROOM B D-002 |
| | MODELING & SIMULATION IN INNOVATIVE FOOD PRODUCTION & PROCESSING TECHNOLOGIES I |
| | MODELING AND SIMULATION IN FOOD SAFETY AND SPOILAGE III |
| 15.00-15.30 | COFFEE BREAK |
| 15.30-17.00 | SESSION BUILDING E |
| | ROOM A E-033 |
| | MODELING & SIMULATION IN INNOVATIVE FOOD PRODUCTION & PROCESSING TECHNOLOGIES II |
| 17.00-18.00 | WORKSHOP BUILDING E |
| | ROOM A E-033 |
| | E-CAM (www.e-cam2020.eu) |
| 18.00-18.15 | CLOSING SESSION FOODSIM'2018 AND BEST PAPER AWARD ROOM A E-033 |
| 19.00-24.00 | CONFERENCE DINNER |
| THURSDAY, 12th APRIL 2018 | |
| 09.00-15.00 | FOODSIM & TIB Company Visits |
| 09.00-15.00 | MEETING ROOM M210 Management Committee Meeting CA COST Action CA15118 Mathematical and Computer Science Methods for Food Science and Industry (FoodMC) |
| 17.00-19.00 | PhD Public Defense: KU Leuven University Hall, Naamsestraat 22 LEUVEN Simen Akkermans: Modeling the maximum specific microbial growth rate - Data, models and predictions |

Registration - Sunday

Sunday, 8th April 2018

HALLWAY BUILDING E – STAFF ROOM D006A

Registration

17.00 - 19.00

BUILDING B

Get-Together-Party

17.00 - 21.00



Monday, 9th April 2018

STAFF ROOM D006A HALLWAY BUILDING E

Registration

08.00 - 17.00

09.00 – 09.30

**GROOT AUDITORIUM E036 - 09.00-09.30
WELCOME ADDRESS**

WELCOME

Introduction to

FOODSIM'2018 and Trends in Brewing 2018

Jan Van Impe, Katholieke Universiteit Leuven, Ghent, Belgium
FOODSIM'2018, General Conference Chair

09.30 – 10.30

**ROOM A - E033 - 09.00-09.30
KEYNOTE ADDRESS**

KEYNOTE

Chair: Jan Van Impe, KU Leuven

KEY_01

Constraint-Based Models of Microbial Physiology: Surprisingly Versatile

Bas Teusink, Bob Planqué, Douwe Molenaar and Frank Bruggeman 5

10.30 - 11.00

COFFEE BREAK

Welcome - Monday

Monday, 9th April 2018

11.00 - 12.00

ROOM A - E033 - 11.00-12.00 **METH**
MULTI-SCALE MODELING METHODS I
 Chair: Bas Teusink, Vrije Universiteit Amsterdam

FOOD_MULTISCALE_01
A Semi-Automatic Modelling Approach for the Production and Freeze Drying of Lactic Acid Bacteria
Thomas Chabin, Marc Barnabé, Alberto Tonda, Nadia Boukhelifa, Fernanda Fonseca, Eric Dugat-Bony, Hélène Velly, Evelyne Lutton and Nathalie Méjean Perrot **243**

FOOD_MULTISCALE_03
A Generalized NURBS Based Dynamic Metabolic flux Analysis Framework: Deciphering Intracellular Pathway Activation from Extracellular Measurements
Philippe Nimmegeers, Simen Akkermans, Wouter Gijzen, Dries Telen and Jan Van Impe **248**

12.00 - 13.00
LUNCH BREAK

13.00 - 15.30

ROOM A - E033 - 13.00-15.30 **METH**
MULTI-SCALE MODELING METHODS II
 Chair: Eva Balsa-Canto, CSIC Vigo

FOOD_MULTISCALE_05
Ghost Competition: On the Reliability of Quorum Sensing as an Information Source for Bacterial Species
Ihab Hashem, Philippe Nimmegeers, Satyajeet Bhonsale, Carlos André Muñoz López and Jan Van Impe **253**

FOOD_MULTISCALE_07
Multi-Scale Modelling to explain Wine Fermentation
D. Henriques, R. Minebois, R. Pérez-Torrado, E. Balsa-Canto and A. Querol **259**

Monday, 9th April 2018

FOOD_MULTISCALE_08

Two-Equation Oxygen Diffusivity of Apple Cortex Tissue for Multiscale Modeling of Gas Exchange

Siem Janssen, Pieter Verboven, Bart Nicolai and Susana Zorrilla 264

FOOD_MULTISCALE_10

Estimation of Intrinsic Viscosity of Apple Cells by Numerical Simulation

Artemio Plana-Fattori, Christophe Doursat, Giana Almeida, Gabrielle Moulin, Cassandre Leverrier, Even Ou and Denis Flick..... 269

FOOD_MULTISCALE_14

Modeling of Microwave Heating in a Cylindrical Cavity System: Effect of Rotation and Sample Location on Temperature Uniformity

Ozan Altin, Ferruh Erdogan, Dagbjørn Skipnes and Torstein Skåra 277

15.30 - 16.00

COFFEE BREAK

16.00 - 18.00

ROOM A - E033 - 16.00-18.00

FOOD PRODUCTS

MODELING AND SIMULATION IN FOOD PRODUCTS

Chair: Artemio Plana-Fattori, AgroParisTech

FOOD_BUS_01

An Evaluation of the Effect of Different Tempering Conditions on Dark Chocolate Compositions

Jewel Ann Joseph, Jan F.M. Van Impe and Monika Polańska 285

INNOV_PROCESS_02

A Long-Short-Term Memory Network Model for Biscuit Baking

Alberto Tonda and Nathalie Perrot 194

INNOV_PROCESS_05

Effect of Xhantan Gum on Physicochemical and Textural Properties of Gluten-Free Batter and Bread

Christian R. Encina-Zelada, José A. Teixeira, Fernando Monteiro, Ursula Gonzales-Barron and Vasco Cadavez 204

INNOV_PROCESS_07

Creating, Refining and Validating a Model Describing Spatiotemporal Dynamics in Cheese during Ripening

Thorsten Stefan 210

Sessions - Monday

Monday, 9th April 2018

MAIN HALL BUILDING B

18.00 - 18.30

Welcome by

Daniel Termont, Mayor of the City of Ghent and Luc Sels, Rector KU Leuven

18.30 - 21.00

DRINK AND WALKING DINNER AT THE TECHNICAL EXHIBITION

Walking Dinner - Monday

Tuesday, 10th April 2018

STAFF ROOM D006A HALLWAY BUILDING E

Registration

08.00 - 17.00

08.30 - 10.00

ROOM A - E033 - 08.30-10.00 **KEYNOTE**

KEYNOTE ADDRESS AND POSITION PAPER

Chair: Vasilis Valdramidis, UMalta

KEY_02

Human in the Loop for Modelling Food and Biological Systems: a Novel Perspective coupling Artificial Intelligence and Life Science

Nathalie Méjean Perrot, Nadia Boukhelifa, Alberto Tonda, Thomas Chabin, Marc Barnabé, Dominique Swennen, Alice Roche, Thierry Thomas-Danguin and Evelyne Lutton..... 11

FOOD_SUSTAIN_03

Position Paper: Needs Analysis and Trends in Sustainable Food Systems within Higher Education

Monika Polańska, Paula Bourke, Enda Cummins, Wolfram Schnäckel Vasilis Valdramidis and Jan Van Impe..... 41

10.00 - 10.30

COFFEE BREAK

10.30 - 12.00

ROOM A - E033 - 10.30-12.00 **PROCESS ENGINEERING MODELING AND SIMULATION IN FOOD PROCESS SYSTEMS ENGINEERING I**

Chair: Ferruh Erdogan, University of Ankara

FOOD_PROCESS_11

A Coupled CFD-Heat Transfer Model for In-Package Solid Food Pasteurization

Clarissa Detomi de Albuquerque, Sébastien Curet and Lionel Boillereaux 172

Sessions - Tuesday

Tuesday, 10th April 2018

FOOD_PROCESS_14

Edible Oil Hydrogenation: Revisited Viscosity Prediction for Accurate Process Simulation

Pierre Albrand, Anne-Marie Billet, Carine Julcour and Vincent Gerbaud..... 181

FOOD_PROCESS_16

Optimal Control of Fructo-Oligosaccharide Production

J. Schorsch, M. Kinnaert, R. Fekih-Salem, L. Dewasme, C.C. Castro and A. Vande Wouwer..... 184

ROOM B - D002 - 10.30-12.00

FOOD SAFETY

MODELING AND SIMULATION IN FOOD SAFETY AND SPOILAGE I

Chair: Eirini Velliou, University of Surrey

FOOD_SAFE_01

Kinetic Modelling of Scavenger Reactions: Parameter Estimation for a Gallic Acid Based Oxygen Scavenger

Astrid F. Pant and Matthias Reinelt 89

FOOD_SAFE_02

Efficient Data Collection for Modelling the Growth Rate as a Function of the Environmental Conditions

Simen Akkermans, Philippe Nimmegeers and Jan F. Van Impe 95

FOOD_SAFE_03

The Role of Control Strategies for the Implementation of Food Safety in Hospital and Health Units, as a Tool for HACCP Assistants and Simulators

Efstathia Tsakali, Olga Gortzi, George Boskou, Andreas Souliotis, Dimitrios Timpis and John Tsaknis 104

12.00 - 13.00

LUNCH BREAK

Tuesday, 10th April 2018

13.00 - 15.00

ROOM A - E033 - 13.00-15.00 **PROCESS ENGINEERING**
MODELING AND SIMULATION IN SUSTAINABLE FOOD SYSTEMS
ENGINEERING

Chair: Alberto Tonda, INRA-Grignon

FOOD_SUSTAIN_01

Design and CFD Simulation of a Parabolic Solar Fruit Dryer

Joshua Wanyama, Cyrus Galyaki, John Muyonga, Nicholas Kiggundu
and Noble Banadda..... 301

FOOD_SUSTAIN_05

Modelling Multicriteria Argument Networks about reduced Meat Consumption

Nicolas Salliou and Rallou Thomopoulos 46

FOOD_CHAIN_01

Numerical Study of Airflow and Temperature Distribution in a loaded Cold Store

Pierre Coldrey, Jean Moureh, Graciella Alvarez, Denis Leducq,
Alain Foster, Mohammed Youbi-Idrissi, Alain Damas and Judith Evans 60

FOOD_SUSTAIN_06

**Consumer Demand for Sustainable versus Low-Cost Food Products:
An Agent-based Modelling Approach**

Rallou Thomopoulos and Serafim Bakalis 52

ROOM B - D002 - 13.00-15.00 **FOOD RISK**
MODELING AND SIMULATION IN QUANTITATIVE RISK
ASSESSMENT

Chair: Efstathia Tsakali, University of West Attika (TEI-Athens)

FOOD_RISK_01

**A Quantitative Human Exposure Assessment Model for Antibiotic Resistant
Escherichia Coli through Tap Water Consumption**

Eithne O' Flaherty, José Luis Balcázar, Carles M. Borrego
and Enda Cummins 71

Tuesday, 10th April 2018

FOOD_RISK_03

Modelling the Persistence of Nano Silver through Drinking Water Treatments

David Shevlin and Enda Cummins 74

FOOD_RISK_06

Next Generation Microbiological Risk Assessment: Next Generation Sequencing (NGS) for the Determination of Fish Flesh Microbiota

Theofania Tsironi, Vassiliki Nefel Simou, Afrodite Mexi, Lougovois Vladimirov, Koussissis Stamatis and Dimitra Houhoula 81

FOOD_RISK_05

Quantitative Risk Assessment of Antimicrobials in the Feed to Food Chain

Rachel Clarke, Mark G Healy, Owen Fenton and Enda Cummins 77

15.00 - 15.30

COFFEE BREAK

15.30 - 17.00

ROOM A - E033 - 15.30-17.00

SOFTWARE TUTORIALS

TUTORIAL AND SOFTWARE TOOLS DEVELOPED AT KU LEUVEN

BioTeC+

Chair: Philippe Nimmegeers, KU Leuven

TUT_01

Sustainability in Food Industry: Towards a Unified Multi-Objective Decision Making Framework

Philippe Nimmegeers, Satyajeet Bhonsale, Carlos André Muñoz López, Ihab Hashem and Jan Van Impe 25

TUT_02

Application of Dynamic Optimization for Food Systems using Pomodoro: A Tutorial

Satyajeet Bhonsale, Dries Telen, Philippe Nimmegeers and Jan Van Impe..... 29

Tuesday, 10th April 2018

**ROOM B - D002 - 15.30-17.00 PROCESS SCHED. SOFTWARE
FOOD PROCESS MODELING AND PRODUCTION SCHEDULING
USING SuperPro Designer AND SchedulePro
Chair: Simen Akkermans, KU Leuven**

FOOD_PROCESS_01

Techno-Economic Evaluation of β -Cyclodextrin Production from Cassava Tubers

Nikolaos Vacharakis, Anastasia Louizaki, Chrysi Charalambous,
Stylianos Raphaelides and Alexandros Koulouris 290

FOOD_PROCESS_02

Modeling a Brewery: Capacity and Cost Analysis

Alexandros Koulouris, Albert Roussos and Demetri Petrides 295

17.00 - 18.30

**ROOM A - E033 - 17.00-18.30 PROCESS SCHED. SOFTWARE
FOOD PROCESS MODELING AND PRODUCTION SCHEDULING
USING SuperPro Designer AND SchedulePro
Chair: Simen Akkermans, KU Leuven**

FOOD_PROCESS_01

Techno-Economic Evaluation of β -Cyclodextrin Production from Cassava Tubers

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Stylianos Raphaelides and Alexandros Koulouris 290

FOOD_PROCESS_02

Modeling a Brewery: Capacity and Cost Analysis

Alexandros Koulouris, Albert Roussos and Demetri Petrides 295

Sessions - Tuesday

Tuesday, 10th April 2018

ROOM B - D002 - 17.00-18.30 SOFTWARE TUTORIALS
TUTORIAL AND SOFTWARE TOOLS DEVELOPED AT KU LEUVEN
BioTeC+
Chair: Philippe Nimmegeers, KU Leuven

TUT_01
Sustainability in Food Industry: Towards a Unified Multi-Objective Decision Making Framework
Philippe Nimmegeers, Satyajeet Bhonsale, Carlos André Muñoz López, Ihab Hashem and Jan Van Impe 25

TUT_02
Application of Dynamic Optimization for Food Systems using Pomodoro: A Tutorial
Satyajeet Bhonsale, Dries Telen, Philippe Nimmegeers and Jan Van Impe..... 29

19.15 - 20.15

19.15 - 20.15



MUSICAL KEYNOTE in
Sint-Baafs Cathedral, Ghent,
by Evelyne Lutton, INRA and
Jan Van Impe, KU Leuven

Wednesday, 11th April 2018

STAFF ROOM D006A HALLWAY BUILDING E

Registration

08.00 - 16.00

08.30 - 10.00

ROOM A - E033 - 08.30-10.00 **KEYNOTE**
KEYNOTE ADDRESS AND FLASH PRESENTATIONS
Chair: Paula Bourke, DIT Dublin

KEY_03

Non-thermal Food Processing: Modelling of Processes towards Safety, Quality and Sustainability

Anet Režek Jambrak, Ilija Djekić and Jan Van Impe..... 19

**Flash Presentations: Erasmus Mundus Students BiFTec.
MSc Food Science, Technology and Business**

10.00 - 10.30

COFFEE BREAK AND POSTER SESSION

10.30 - 12.00

ROOM A - E033 - 10.30-12.00 **PROCESS ENGINEERING**
MODELING AND SIMULATION IN FOOD PROCESS SYSTEMS
ENGINEERING II
Chair: Torstein Skåra, Nofima

FOOD_PROCESS_06

Simultaneous Data Scaling and Training of Data Driven Regression Models for Quality Control of Batch Processes

Carlos André Muñoz López, Philippe Nimmegeers and Jan Van Impe.....150

Sessions - Wednesday

Wednesday, 11th April 2018

INNOV_PROCESS_14

Characterization of Fish Based Model Food Systems for Microwave Heating Modeling

Ferruh Erdogdu, Huseyin Topcam, Ozan Altin, Davy Verheyen, Jan F. Van Impe, Ti Kian Seow, Dagbjørn Skipnes and Torstein Skåra 235

FOOD_PROCESS_12

Numerical Modelling of Airflow and Heat Transfer in a Vented Pallet of Cheese

Anh Thu Pham, Jean Moureh and Denis Flick 177

ROOM B - D002 - 10.30-12.00

FOOD SAFETY

MODELING AND SIMULATION IN FOOD SAFETY AND SPOILAGE II

Chair: Maria Baka, KU Leuven

FOOD_SAFE_04

Modelling of Temperature, Water Activity and Microbial Growth on the Surface of a Pork Leg during Refrigerated Transportation

Mouna Merai..... 108

FOOD_PROCESS_04

PSE4GUT: Influence of a Low Calories Diet Shift on Gut Microbiota Dynamics - Towards a Process Systems Engineering Approach

Theodora Akritidou, Cindy Smet, Philippe Nimmegeers, Simen Akkermans and Jan F.M. Van Impe 145

FOOD_SAFE_05

Quantitative Anti-Fungal Activity Assessment of ZnO Nanoparticles: Towards the Design and Development of Novel Air Filtration Systems

Vasilis P. Valdramidis, Davide Sardella and Ruben Gatt.....113

12.00 - 13.00

LUNCH BREAK

13.00 - 15.00

ROOM A - E033 - 13.00-15.00

PROCESS ENGINEERING

MODELING AND SIMULATION IN INNOVATIVE FOOD PRODUCTION AND PROCESS TECHNOLOGIES I

Chair: Anet Režek Jambrak, University of Zagreb

Wednesday, 11th April 2018

INNOV_PROCESS_09

Influence of Cold Atmospheric Plasma on the Microbial Dynamics of *Salmonella Typhimurium* during Storage at Different Temperatures

Cindy Smet, Maria Baka, James Walsh, Vasilis Valdramidis

and Jan F.M. Van Impe 214

INNOV_PROCESS_01

Modelling and Validation of Time Temperature History and Enzyme Inactivation in the Continuous Flow Microwave assisted Pasteurization of Apple Juice

Érica S. Siguemoto, Carmen C. Tadini and Jorge A. W. Gut..... 189

INNOV_PROCESS_03

On the Quantification of the Impact of Natural Antimicrobials on the Growth Kinetics of *Listeria* in Complex Food Models

Katherine Costello, Madeleine Bussemaker, Eirini Velliou, Jorge Gutierrez-

Merino, Maria Baka and Jan Van Impe..... 199

INNOV_PROCESS_10

Influence of Plasma Characteristics on the Efficacy of Cold Atmospheric Plasma (CAP) for Inactivation of Biofilms developed by *Listeria Monocytogenes* and *Salmonella Typhimurium*

M. Govaert, C. Smet, M. Baka and J.F.M. Van Impe..... 221

ROOM B - D002 - 13.00-15.00

FOOD SAFETY

MODELING AND SIMULATION IN FOOD SAFETY AND SPOILAGE III

Chair: Enda Cummins, UCDublin

FOOD_SAFE_07

Effect of Food Microstructure on Thermal Inactivation Dynamics of *Listeria Monocytogenes*

Davy Verheyen, Maria Baka, Torstein Skåra and Jan F. Van Impe..... 117

FOOD_SAFE_12

Growth/No Growth Models of Different Stress adapted *Listeria Monocytogenes* Strains

Pantelis Stathopoulos, Dimitra Houhoula, Dimitris Timpis, Efstathia Tsakali,

Jan Van Impe and Spiridin Konteles..... 135

Wednesday, 11th April 2018

FOOD_SAFE_08

A Simple Method for growing Pseudomonas Fluorescens Biofilms on a Hydrophobic Polystyrene Surface

Valeria Angarano, Cindy Smet, Maria Baka, Simen Akkermans, Andre Chieffi and Jan Van Impe 125

FOOD_SAFE_10

Stochastic Methods to model Bacterial Growth and Food Safety Risks: Some Perspectives

Miriam R. García and Antonio A. Alonso 130

15.00 – 15.30

COFFEE BREAK

15.30 - 17.00

ROOM A - E033 - 15.30-17.00 PROCESS ENGINEERING MODELING AND SIMULATION IN INNOVATIVE FOOD PRODUCTION AND PROCESS TECHNOLOGIES II

Chair: Cindy Smet, KU Leuven

INNOV_PROCESS_12

Modelling Microbiological and Quality Marker Responses to Enhance Cold Plasma Cereal Grain Processing

Dana Ziuzina, Agata Los, Simen Akkermans, Daniela Boehm, Patrick J. Cullen, Jan F.M. Van Impe and Paula Bourke 229

FOOD_PROCESS_08

Smart Sensors to assess and to anticipate Fish Quality Evolution

Carlos Vilas, Miriam R. García, Eva Balsa-Canto and Antonio A. Alonso 158

FOOD_PROCESS_10

Industrial Process design for Microwave Pasteurization of Liquid Foods: a Computational Study

Huseyin Topcam and Ferruh Erdogdu.....166

Wednesday, 11th April 2018

17.00 - 18.00

ROOM A - E033 - 17.00-18.00
WORKSHOP E-CAM

WORKSHOP

Chair: Alexandros Koulouris, TEI of Thessaloniki

WORK_01

**E-CAM: a European Infrastructure for Advanced Simulation Software
Development, Training and Industry Collaboration from Food and Pharma
to Advanced Materials**

Donal Mac Kernan..... 33

18.00 - 18.15

ROOM A - E033 - 18.00-18.15
CLOSING SESSION

Chair: Monika Polańska, KU Leuven

Closing Session and Best Paper Award

19.00 - 24.00

CONFERENCE DINNER



The conference dinner will be held on Wednesday the 11th of April in the evening at the [Restaurant Lof](http://www.lof-restaurant.com/restaurant-lof-en.html), Hoogstraat 36 9000 Gent
☎ Tel: +32. 9.235.40.71
<http://www.lof-restaurant.com/restaurant-lof-en.html>

Conference Dinner - Wednesday

Thursday, 12th April 2018

09.00 - 15.00

CONFERENCE VISIT



The conference company visits are scheduled for Thursday the 12th of April from 09.00 to 15.00 to (optional at extra cost - limited spaces available only) either:

Brewery St. Feuillien

<http://www.st-feuillien.com/en/>

Brewery Van Honsebrouck

<https://www.vanhonsebrouck.be/>

Brewery Eutropius

<https://www.brouwerij-eutropius.be/en/beers/st-tabarnak>

| | |
|---|-------------|
| ROOM M.210 - 09.00-15.00 | COST |
| MEETING MANAGEMENT COMMITTEE | |
| Chair: Alberto Tonda, INRA-Grignon | |

CA COST Action CA15118 Mathematical and Computer Science Methods for Food Science and Industry (FoodMC)

17.00 - 19.00

| | |
|---|--------------------|
| KU LEUVEN - 17.00-19.00 | PhD DEFENSE |
| KU Leuven University Hall, Naamsestraat 22, Leuven | |
| Chair: Hugo Hens, KU Leuven | |

Modelling the Maximum Specific Microbial Growth Rate – Data, Models and Predictions

Simen Akkermans

Poster Presentations

FOODSIM 2018 Poster Session

Multi-objective Optimization of the Formulation of Barley Bread using Artificial Neural Network and Genetic Algorithm

Predrag Kojić and Milica Pojić 57

Meat Products Technology

Bolun Ma, Laboratory for Meat and Meat Products/KU Leuven

Development of a Graphical User Interface (GUI) for Predictive Microbiology

Krishnachandra Hidangmayum, BioTeC+/KU Leuven

Dairy Products Quality and Innovation

Sayujya Ravichandran, Flanders Research Institute for Agriculture, Fisheries and Food - ILVO, Belgium

Assessment of the Antimicrobial Efficacy of the Plasma Activated Liquids (PALs) and Possibility for Application within the Food Industry

Md. Easdani, BioTeC+/KU Leuven

Research and Innovation Engineer: Support Multiple Projects in the Essential Dairy and Plant-Based Division

Arisa Thamsuaidee, Danone, Belgium

Analysis of Wheat Flour Lipid Composition

Vinitha Krishna Parasuram, Puratos Group, Belgium

Analysis of Alkalized Cocoa Liquor before and after Extraction of Fat

Vivek Mukherjee, Barry Callebaut, Belgium

Virology (Viruses Prevalence, Detection Methods and Challenges)

Olivera Maksimovic, Campden BRI, UK

Analysis of Linoleic Acid in Sugar Beets - Method Development

Maureen Lukitasari Hermawan, Tereos, Belgium

New Approaches in Chocolate Producing Methods

Rachel Hadley, Cargill R&D Centre Europe, Belgium

Quality Control Assessment during the Brewing Process

Sanja Ivanovic, Simonds Farsons Cisk, Malta

Microwave, HPP and Shaka Technology in Food Model Systems

Ti Kian Seow, Nofima, Norway

FOODSIM'2020

FOODSIM'2020

All participants are invited to take part in FOODSIM'2020 which will also be held at



[KU Leuven Technological campus](#)
[Gent](#)

Gebroeders de Smetstraat 1
9000 Ghent

Tel: +32.9 265 86 10

Proposals for workshops, special tracks, exhibitions etc. can be sent in by **December 2018** to Philippe.Geril@eurosis.org & Jan.VanImpe@kuleuven.be

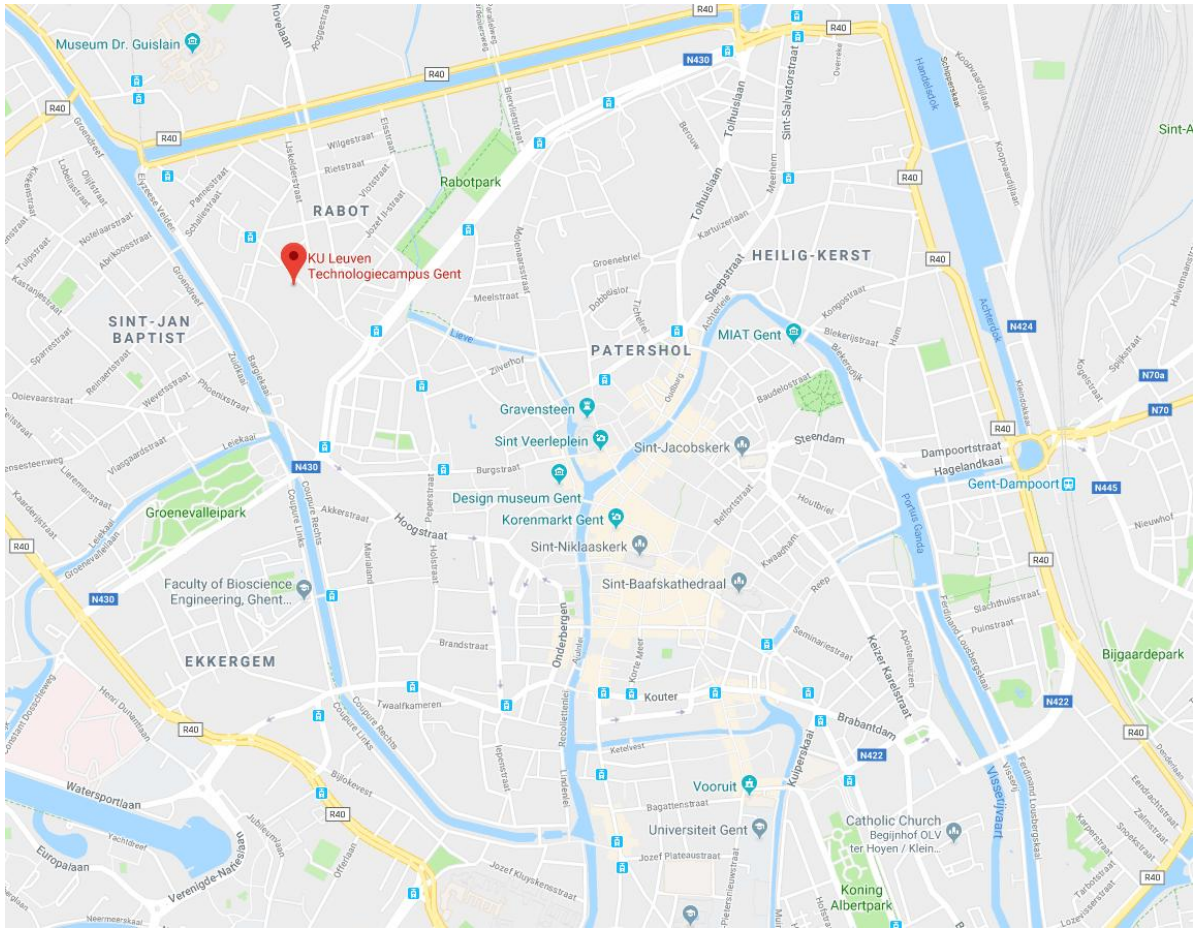
Conference Site Map



The conference takes place in rooms E-033 and D-002 in Building E. The Conference exhibition, coffee breaks and lunches are in Building B

Conference Site Map

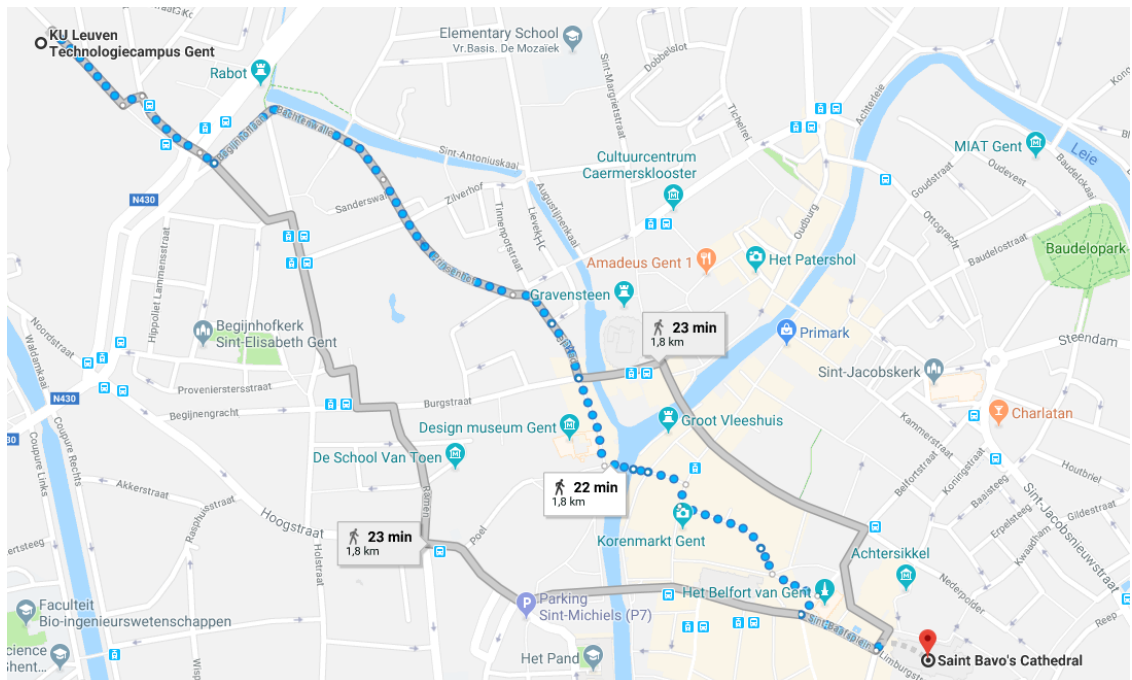
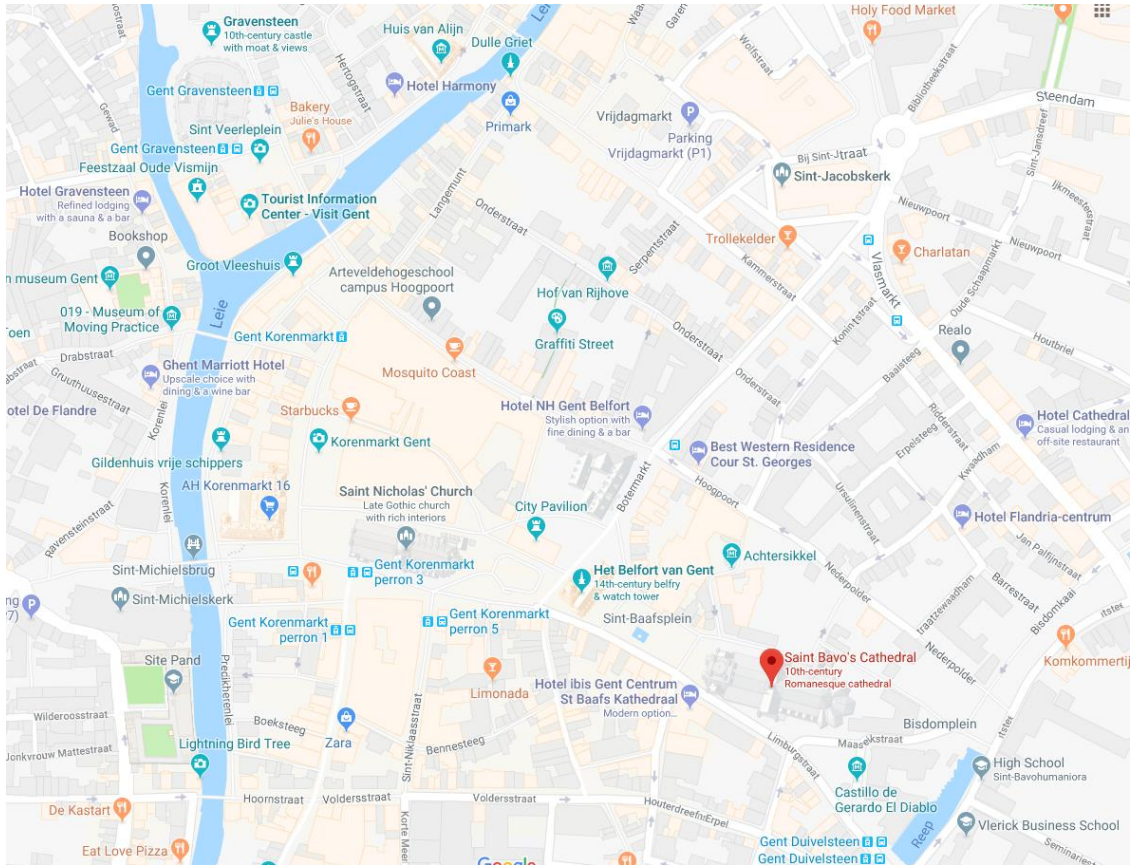
Conference Site Map



KU Leuven / Technologicampus Gent

Conference Site Map

Ghent Centre with Sint-Baafs Cathedral (Saint Bavo's Cathedral)



Conference Site Map

NOTES

FOODSIM'2018 At-Conference Registration Form

Please legibly print or type and fill out completely. (Check appropriate boxes where necessary)

| | | |
|---|-----------|---------|
| FIRST NAME | LAST NAME | M.I. |
| COMPANY OR AFFILIATION | | |
| Mailing address (tick one): <input type="checkbox"/> HOME <input type="checkbox"/> BUSINESS | | |
| STREET | | |
| CITY | | |
| ZIPCODE | COUNTRY | |
| TELEPHONE | FAX | |
| E-MAIL | | |
| DATE | SIGNATURE | |
| 1. <input type="checkbox"/> EUROSIS member € 615 Member Number: _____ | | € _____ |
| 2. <input type="checkbox"/> Members of Sponsor or Affiliate Society € 615 | | € _____ |
| 3. <input type="checkbox"/> Non-Member Participant € 665 | | € _____ |
| 4. <input type="checkbox"/> Student Participant € 515 | | € _____ |
| 5. <input type="checkbox"/> Students, <u>who are not authors</u> but who wish to attend the conference, or ONE DAY PARTICIPANTS pay: € 445 | | € _____ |
| (Above registration fees include, one copy of the PROCEEDINGS, all midday meals, cocktail, refreshments, coffees and social program,) One Day Participants and Non-Author Students cannot participate in the conference dinner. | | |
| 6. <input type="checkbox"/> Tutorial registration ONLY - €30 (students) Or €80 (non students)/ per tutorial | | € _____ |
| 6. <input type="checkbox"/> Conference Dinner Ticket for Companion € 80 <input type="checkbox"/> Lunch Ticket for Companion € 25/day <input type="checkbox"/> Walking Dinner Ticket for Companion € 50 | | € _____ |
| 7. <input type="checkbox"/> Extra Conference Proceedings € 50 Cash and Carry | | € _____ |
| VAT Number if applicable: _____ | | |
| TOTAL AMOUNT DUE | | € _____ |
| <u>ADD 21% VAT (Value Added Tax) OBLIGATORY</u> | | € _____ |
| TOTAL AMOUNT REMITTED | | € _____ |

[1²) Pay by **CREDIT CARD** and fill in the information below:

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eurosis

EUROSIS was borne out of discussions with the European Community to set up a new kind of Society, which would be project driven instead of driven by pure membership and conferences.

The aim of EUROSIS is to set up topic related Technical Committees which will link directly to European Projects in the field of computer simulation and related areas and to act as a knowledge pool for future European Networks of Excellence, like MOSAIC.

If you would like to receive more information about EUROSIS, please contact

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