INTERNATIONAL FRANCQUI CHAIR 2016–2017

Inaugural and further lectures

Granted to

PROF DR RODNEY FOX

Anson Marston Distinguished Professor in Engineering, Department of Chemical & Biological Engineering, Iowa State University

Inaugural lecture
Multiscale Modeling in Computational Fluid Dynamics

The inaugural lecture will take place on **December 7, 2016** at **16:00** in the **Aula of Ghent University** (Voldersstraat 9, 9000 Ghent) and will be followed by a reception for which you are kindly invited.

LECTURE PROGRAM

Wednesday December 7, 2016 – 16:00
AULA, Voldersstraat 9, 9000 Ghent
Inaugural lecture: Multiscale Modeling in Computational Fluid Dynamics

Thursday February 23, 2017
Introduction to disperse multiphase flows
Mesoscale description of polydisperse flows

Thursday March 2, 2017
Quadrature-based moment methods (QBMM)
The generalized population balance equation

Thursday March 9, 2017
Mesoscale models for physical and chemical processes
QBMM for spatially homogeneous flows

Thursday March 23, 2017
QBMM for spatially inhomogeneous flows
High-order, realizable, kinetic-based, finite-volume methods

Thursday March 30, 2017
Turbulence modeling for disperse multiphase flows
Application to fine-particle formation

Thursday April 6, 2017
Application to bubbly flows
Application to gas-particle flows

Venue of the lectures (except for the inaugural lecture): iGent – AUD.1 – Technologiepark 915 – 9052 Ghent
Time schedule of the lectures (except for the inaugural lecture): 14:30 – 17:15

Professor Rodney Fox is a Distinguished Professor in Engineering at Iowa State University. In 2016 he was selected for the North American Mixing Forum Award for Excellence and Sustained Contributions to Mixing Science and Practice, and the Shell Particle Technology Forum Thomas Baron Award.

Professor Fox has made numerous ground-breaking contributions to the field of multiphase and reactive flow modeling. The Fox group spearheaded many fundamental advances in the development of novel computational fluid dynamics (CFD) models to overcome specific scientific challenges faced in the chemical and petroleum industries. He pioneered the use of in situ tabulation for efficiently handling complex chemistry in detailed multiphase reactor models, and developed powerful quadrature-based moment methods for treating distribution functions (particle size, bubble size, etc.) required for CFD models of single and multiphase reactors. The impact of Fox's work extends far beyond chemical engineering and touches every technological area dealing with turbulent flow and chemical reactions (e.g., combustion, atmospheric science, nuclear fuel processing, etc.). His first book, Computational Models for Turbulent Reacting Flows, published by Cambridge University Press (CUP) in 2003, offers an authoritative treatment of the field. His second CUP book in 2013, Computational Models for Polydisperse Particulate and Multiphase Systems, provides a comprehensive treatment of CFD model for disperse multiphase flows.

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FACULTY OF ENGINEERING AND ARCHITECTURE

Please confirm your attendance by November 30 to Sarah Verschooren via Sarah.Verschooren@UGent.be (tel. +32 (0)9 331 17 58)).