

TWIN SCREW EXTRUSION SEMINAR AND WORKSHOP

ACADEMIC PROGRAM

Medellin, Colombia, ICIPC, June 4 - 5, 2015

June 4th, 2015

8:30	–	9:00	Registration and Welcome
9:00	–	9:45	Trends in twin screw extruders and other compounding machines María del Pilar Noriega Escobar, Ph.D. - ICIPC
9:45	–	10:30	Twin screw extrusion (TSE) fundamentals and scale-up MBA Charlie Martin - Leistritz
10:30	–	11:00	Networking Coffee Break
11:00	–	12:00	Pharmaceutical Hot Melt Extrusion for the production of Solid Oral Dosages Viewed by the Polymer Processing Institute as a Special Case of Polymer Compounding Dr. Costas G. Gogos- PPI (Polymer Processing Institute)
12:00	–	14:00	Lunch at ICIPC Headquarters
14:00	–	14:45	Improving the Dissolution Rate of APIs during Pharmaceutical Hot-Melt Extrusion through Material and Design Variables Dr. Nicolas Ioannidis- PPI (Polymer Processing Institute)
14:45	–	15:30	Modified Injection Molding for Solid Oral Dosages and Medical Devices Dr. Costas G. Gogos- PPI (Polymer Processing Institute)
15:30	–	16:00	Networking Coffee Break
16:00	–	16:45	Energy efficiency in TSE Mag. Omar Estrada - ICIPC
16:45	–	17:00	<i>Panel of Experts and Q&A session</i>

Note: Simultaneous translation is available.

June 5th, 2015

8:30		9:00	Foaming in TSE and new developments Charlie Martin – Leistriz
9:00		9:30	Polymer Foaming During Pharmaceutical Hot-Melt Extrusion for Accelerating the Dissolution Rate of Oral Dosages and Improving the Grindability of Extrudates Dr. Nicolas Ioannidis- PPI (Polymer Processing Institute)
9:30		10:00	Networking Coffee Break
10:00	–	10:45	Practical work on manufacturing of pharmaceutical formulation based on a polymer matrix and an active ingredient (API) by TSE M.Sc. Omar Augusto Estrada – ICIPC M.Sc. Laura Restrepo - ICIPC <i>ICIPC Laboratories: Twin Screw Extruder, Nano 16</i>
10:45		12:30	Practical work on manufacturing of an industrial polymer compound by TSE: Part I: masterbatch manufacturing and Part II: foaming M.Sc. Omar Augusto Estrada – ICIPC Eng. Alexander Hernández - ICIPC <i>ICIPC Laboratories: Twin Screw Extruder, Micro 27</i>
12:30		13:00	<i>Panel of Experts and Q&A session</i>
13:00		14:00	Lunch at ICIPC Headquarters

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Nomenclature

TSE: Twin Screw Extrusion

HME: Hot Melt Extrusion

API: Active Pharmaceutical Ingredient

Dr. Costas G. Gogos: he received both his undergraduate and graduate education at Princeton University, where he studied Polymer Engineering at the Princeton Plastics Laboratory under the late Prof. Bryce Maxwell. Dr. Gogos was one of the co-founders of the Polymer Processing Institute (PPI) (1982), championed by the late Prof. Luigi Z. Pollara of Stevens. PPI has been a model Industry/Academe “buffer” independent not-for-profit industrial research organization serving the polymer industry worldwide. He currently serves as Chairman of the Board of Trustees of PPI, President Emeritus and Member of the Technical Board. Previously he served PPI as President, Director of New Initiatives and Head of the Polymer Mixing Study, which was supported by as many as 19 international industrial sponsors. In 1999, after becoming Professor Emeritus of Stevens, he was appointed Distinguished ChE Research Professor at NJIT. At the same time the PPI laboratories and operations also moved from Stevens to NJIT. There he is involved in active research in polymer processing, currently heading a large Federally-funded NJIT/PPI program, teaching occasional graduate courses and continuing his technical participation in PPI- Polymer Industry collaborative projects.

Ph. D. María del Pilar Noriega E. Current Director General of ICIPC. Chemical Engineer from the Universidad Pontificia Bolivariana, Medellin. She has graduate studies in Polymer Extrusion from the University of Stuttgart (IKT - Germany) and polymer chemistry from the Technical University of Dresden (Germany). She earned her Ph.D. in Mechanical Engineering with emphasis on polymers at the University of Wisconsin- Madison, USA, 2001. Head of the Extrusion department of ICIPC from 1993 to 1997. She was the Technical Director of the same institute from 1997 to June 2012. Since then she is Director General of ICIPC. Member of Extrusion Division Board of Directors of the Society of Plastics Engineers, SPE, USA. Author of technical books and numerous technical papers in national and international journals. She is co-inventor of four granted patents in Colombia and one granted patent in USA.

Charlie Martin – Leistriz: he has worked in the extrusion industry since 1984 in a variety of technical and marketing capacities. In his current position as General Manager, he is responsible for the Leistriz product line of twin screw extruders and systems in North and South America. He has given presentations at more than 100 worldwide events. In addition to authoring numerous technical articles and chapters, he is the author of the chapter entitled “Twin Screw Extrusion” for the SPE Guide on Extrusion Technology and Troubleshooting (2002), and the co-editor of the textbook entitled Pharmaceutical Extrusion Technology (2003). Charlie sits on the Board of Directors for both the Society of Plastics Engineers (SPE) Extrusion Division and the Polymer Processing Institute, was the Technical Program Chairman for ANTEC 2008, and was the 2009-2010 Chairman for the SPE Extrusion Division. He earned his undergraduate degree from Gettysburg College, and his graduate degree from Rutgers University.

Ph.D. Nikolaos Ioannidis: research engineer at the Polymer Processing Institute (PPI) in Newark, New Jersey and has been working in the area of Hot-Melt Extrusion for the past three years. He holds a B.Eng in Chemical Engineering, an M.Sc in Biochemical Engineering and a Ph.D in Chemical Engineering from the University of Birmingham, United Kingdom. Co-author of numerous technical papers in polymer processing and pharmaceutical journals

Magister Omar Estrada R.: Chemical Engineer from the National University of Medellin with graduate studies in Transformation Processes of Plastics and Rubber from EAFIT University - ICIPC. He received his Master of Engineering degree in Polymer Processing at EAFIT University - ICIPC. He worked in the Technical Division of ICIPC, specifically in the area of Extrusion, from 1997 to 2006. He worked in the extrusion industry from 2006 to February 2009 and since then he is responsible of the ICIPC Continuous Processes Department. Author of numerous technical papers in national and international journals