

Chemical Engineering and Beer-Making

Mario Jolicoeur and Philippe Leclerc

This keynote lecture is an introduction to the wonderful world of beer making. Why beers have different colours? Why beers have different tasting profiles? These are the questions you will get answers to! From the history of beer to its final conditioning, this conference will guide you through the brewing process and how chemical engineers are there to optimize every step. A list of the key equipment you require to brew at home will be given and explained.

Biographical Notes

Philippe Leclerc got his bachelor's degree in chemical engineering from Polytechnique Montreal in 2012. He was the director of "Polybroue", a technical society of brewing engineering and the director of "Les Houblonneries", a beer festival at Polytechnique Montréal. He is now conducting a Ph.D. in chemical engineering at Polytechnique Montreal under the supervision of Prof. Jamal Chaouki and Dr. Jocelyn Doucet. He has been an amateur brewer since 2006 and brewed over 100 beers. Over the years, he built a small home brewery using the chemical engineering knowledge he gathered during his curriculum.



Mario Jolicoeur is a professor of chemical engineering at Polytechnique. He graduated in chemical engineering in 1987 at Polytechnique. He obtained a Master degree (Poly) in 1990 designing bioreactor for complex fluids, and then worked as a process engineer for four years and a half, in biotechnology. He then performed Ph.D. studies (1994-98), also at Polytechnique, but with multiple prolonged stay at the Université Paul Sabatier in Toulouse, France, followed by a postdoc at MIT on metabolic engineering.



As an undergraduate student, he started making wine and has never stopped since. However, encouraged by Philippe and his co-brewers of Polybroue, he has set up a graduate course on beer brewing on the winter semester of 2013. Although he avoids thinking as a chemical engineer while making wine, he discovered that designing and making beers is an amazing playground for chemical engineers and especially for biochemical engineers.