

2007 AIChE Annual Meeting - Mozilla Firefox


File Edit View Go Bookmarks Tools Help

file:///E:/SALT-LAKE/ABSTRACTS/LAKE-rdias.htm

Customize Links Free Hotmail Windows Media Windows s author\_guidelines\_sy...

# 2007 AIChE Annual Meeting

Salt Palace Convention Center  
Salt Lake City, Utah  
November 4-9, 2007



**Navigation**

- Topical Conferences
- Non-Topical Conference Programming
- Technical Program by Date
- Technical Program Grid
- Author and Chair Index
- Topical Conference Chair Contacts
- www.aiche.org
- Search
- Copyright
- Help

## 509c Kinetic Modelling of Semi-Batch Radical Crosslinking Copolymerizations

Miguel A. D. Gonçalves<sup>1</sup>, **Rolando C. S. Dias<sup>1</sup>**, and Mário Rui P. F. N. Costa<sup>2</sup>. (1) LSRE - Instituto Politécnico de Bragança, Quinta de S. Apolónia, Bragança, 5300, Portugal, (2) LSRE - Faculdade de Engenharia da Universidade do Porto, Rua Roberto Frias s/n, Porto, 4200-465, Portugal

Radical crosslinking copolymerizations of mono- and divinyl monomers are performed using a 2.5 L semi-batch reactor. It is studied the kinetics of the monomers consumption, which is a critical information for predicting measured molecular properties of the polymer, such as the average molecular weights, and estimate gelation time and post-gel behavior. The influence of the feed policies of the monomers on the properties of the polymers could also be experimentally assessed.

The analysis of the products is also carried out using a SEC system with a refractive index detector coupled with a MALLS detector. This combination enables the determination of a good approximation to absolute molecular weight distributions, as well as a direct measure of the average radius of gyration of the polymers, thus yielding experimental information about the branching architecture.

These experimental measurements are compared with the predictions of previously developed kinetic models capable of dealing with the complexities of this kind of polymerization systems [1,3]. The results thus obtained show a fair consistency with theoretical predictions and they are expected to allow further improvements of the current knowledge on the combined modeling and design of these products and reactors.

References

- [1] Costa M.R.P.F.N., Dias R.C.S., Polymer, 48, 1785, 2007
- [2] Dias R.C.S., Costa M.R.P.F.N., Polymer, 46, 6163, 2005
- [3] Costa M.R.P.F.N., Dias R.C.S., Chemical Engineering Science, 60, 423, 2005

Done

start SALT-LAKE Adobe Acrobat Profe... 2007 AIChE Annual M...

11:18  
segunda-feira  
12-11-2007