

POLYMER CHEMISTRY AND MACROMOLECULAR ENGINEERING

Paper Analysis Assignment Questionnaire

Guidelines:

- Carefully read the article that you have been assigned.
- Prepare a report that covers the **5 points** listed below. The assignment is worth **100 points** in total.
- Your report should be no longer than **2-3 pages**. Start your report with your name and Sciper number as well as the bibliographic details of the paper that you have analyzed in the following format: A. Author, B. Author, Title of the Paper, *Journal Name*, **Year**, Volume, Page X – Page Y.
- You must upload your report via Moodle by **December 18 (23h59 at the latest)**. Submission via email or as a hardcopy is not possible.

Questions:

- 1) What was the objective of the study reported in this paper? **(10 pts)**
- 2) What are the results and conclusions of this study? **(10 pts)**
- 3) Synthesis: **(32 pts)**
 - a) Give the reaction equation(s) with the chemical structures of the polymer(s) synthesized in this paper. **(8 pts)**
 - b) Indicate for each polymer whether it is a condensation or an addition polymer. **(12 pts)**
 - c) Determine if the polymerization proceeds via a step, chain or other polymerization mechanism. **(12 pts)**
- 4) Characterization: **(38 pts)**
 - a) Which experimental technique(s) did the authors use to characterize their polymer(s)? **(12 pts)**
 - b) What are the molecular weights and dispersities of the polymer(s) reported in this study? **(8 pts)**
 - c) Did the authors try to control the molecular weight of the polymers? If yes, how was this achieved? If not, which strategies could the authors have used to control the molecular weight of the synthesized polymer(s)? **(18 pts)**
- 5) Can you propose an alternative synthetic approach to prepare the polymer(s) reported in this paper? (Hint: think about different architectures, functional groups, polymerization mechanisms etc.) **(10 pts)**