

Biopolymers

Discussion day

Biopolymers
CHEM-E2155

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Schedule

| Day | Subject of lecture | Discussion part |
|-------------|------------------------------|--------------------------|
| 08 January | Introduction to the course | |
| 15 January | Biopolymers overview | Reading 1 |
| 22 January | Biopolymers for packaging | Reading 2 |
| 29 January | Discussion day | Reading 3 & Assignment 1 |
| 05 February | Biodegradation 1 | Reading 4 |
| 12 February | Biodegradation 2 | Reading 5 |
| 26 February | Discussion day | Reading 6 & Assignment 2 |
| 04 March | Chitin, alginates and others | Reading 7 |
| 11 March | Proteins | Reading 8 |
| 18 March | Discussion day | Reading 9 & Assignment 3 |
| 25 March | TBD | Reading 10 |

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Schedule

- **Short joint discussion / 10 min**
- **Breakout rooms with each 4 students / 30 min**
- **Return to main session and leave a note in the chat / 5 min**

- **(Break)**

- **Discussion of reading assignment 6**

Learning Outcomes

For the second assignment

- You have identified material properties through problem-based learning

Proposed substitutes

- PLA (blends: wheat gluten, CNF, clay, ABS)
- PHAs, PHB (blends), PHBV
- PGA
- ABS + flax
- Chitin, chitosan
- Poly(limonene carbonate)
- bio-PP, r-PP
- bio-PET, r-PET
- PEF + ZnO₂
- bio-PA
- Nanocellulose + PE, wax
- TPU
- acrylonitrile styrene acrylate

Comments

Submissions generally of high quality

- Sources cited mostly correctly (sometimes date of webpage access or source of figure missing)
- Good summaries of your findings
- In some cases too little information

Grading

Grade reduction if

- if assignment was fulfilled following the instructions: grade = 4
- higher grade for additional references, clear representation of findings, extra discussion, etc.
- reduction of grad if
 - no numeric values for oxygen transmission rate
 - late submission

| Grading | |
|---|---------------|
| Each course assignment 20% of final grade | 3 x 15% = 45% |
| Padlet summaries of group Reading assignments | 15% |
| Peer-grading from group discussion | 10% |
| Final assignment | 30% |

Discussion of Assignment 2

- 1) Present your slides to each other
- 2) Discuss how and where you have found your information
- 3) Compare your solution
 - Are they the same?
 - How do they differ?
 - Is there a best solution?

Reading 6 discussion

Title: Disposable Paper-based Food Packaging

Discussion items:

- **Discuss production and consumption volumes of paper and board and packaging material, respectively.**
- **What are your key take-aways from the recycling chapter?**
- **How do you see paper/board-based food and beverage packaging?**

Instructions:

Write your names and answers in e.g. PowerPoint. Save the text as image file (.jpg) and upload it to the Padlet page:

https://padlet.com/michaelhummel/CHEME2155_2024



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