Homework 12

Plastics in a Circular Economy

This week we covered biopolymers.

1. Give examples of the four types of plastics 1) conventional, 2) bio-based, 3) bio-based and biodegradable, 4) biodegradable but not bio-based. Gove examples of compostable and industrially compostable plastics?
2. What is the difference between home and industrial composting? Can PHB be composed by these processes? What about PLA? Why?
3. What are renewable sources of methane? How can methane be used to produce plastics (list the reactions needed for this operation)?
4. How is bio-oil produced? How can it be used to produce plastics? Are any of the plastics produced from bio-oil biodegradable?
5. What is the difference between cellulose, starch, amylose, amylopectin, hemicellulose, glucose, and lignin? Which of these can serve as a feedstock for plastics and how?