第 273 回　定例オープンセミナー（2021/10/20）資料

Link the cell wall to protein – from cellulose synthase to wood cell wall synthesis
細胞壁とタンパク質の接点　―　セルロース合成酵素から木材細胞壁の合成へ

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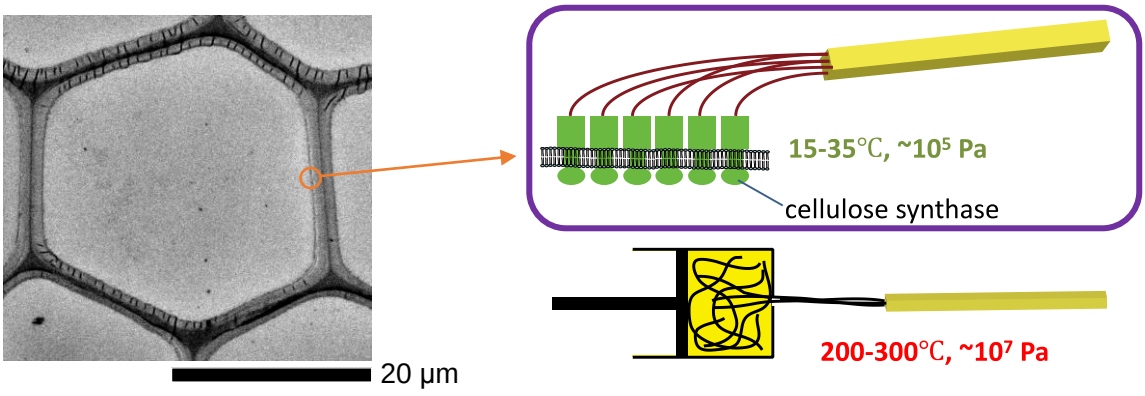
関連ミッション：Mission-1, 2, & 4

要旨：

Wood is a natrual polymer composite and expected as a sustainable material in future where many of the materials derived from petrolike plastics will not be availabel as much as now. “Natrual” polymer means that it is synthesized biologically. This subsequently indicates that wood is synthesized at ambient temperature and pressure under aqueoous environment, which is strikingly different aspect from the synthesis of synthetic polymers.

Such sophisticated synthesis is realized by enzyme protein. Then it is very improtant to investigate the wood formation in a view of protein functions. However, the study with this viewpoint has been less popular, and therefore, direct observation of cell wall-synthesizing proteins is now demanded for understanding wood cell wall formation as the polymer composite synthesis at an ambient condition.

Cellulose synthase is a representative model to study this beautiful biological machinery. In my talk, I would like to show my perspctive about the synthetic biology of cellulose and cell wall.



Wood is polymer composite and its synthesis is done by enzyme protein at ambient temperature and pressure in aqueous environment. This synthetic condition is eco-friendly in comparison with the case of a synthetic polymer like polypropylene.

Reference: *Glycoforum*, **24(2)**, A4 (2021) https://doi.org/10.32285/glycoforum.24A4