

Fig. 1. Possible Mn^{2+} -binding sites. Computationally derived sites are marked with purple spheres.

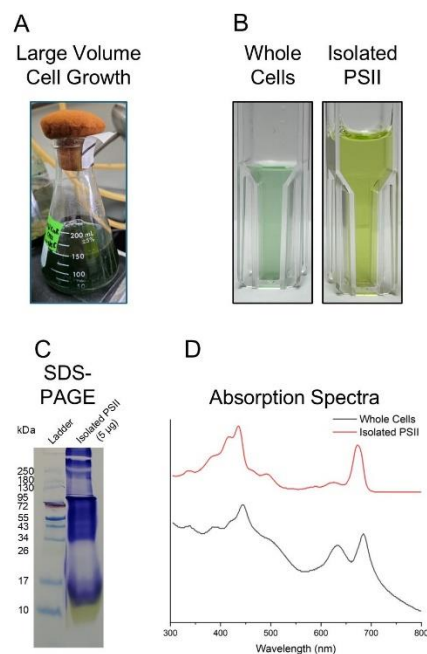


Fig. 2. Cell growth and characterization of PSII from *Synechocystis*. **(A)** A liquid culture of cells used for protein isolation. **(B)** Whole cells and isolated PSII. **(C)** SDS-PAGE of a PSII isolation. **(D)** Absorption spectroscopy of whole cells and isolated PSII.

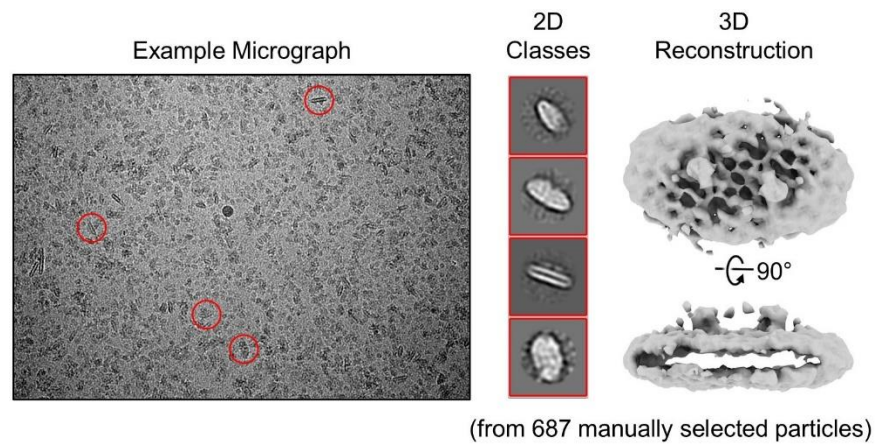


Fig. 3. Cryo-EM of isolated PSII. In the example micrograph, a few PSII particles are selected as examples.

Table 1. PSII subunits identified in LC-MS/MS of the trypsin-digested protein isolation. Core and extrinsic subunits are highlighted in green.

Protein	Molecular Weight	Count
PsbB	56 kDa	1027
PsbC	50 kDa	398
PsbO	30 kDa	283
PsbA	40 kDa	213
PsbD	39 kDa	183
Psb28	13 kDa	160
Psb27	15 kDa	129
PsbU	14 kDa	108
Ycf48	37 kDa	50
PsbV	18 kDa	46
PsbQ	16 kDa	46