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Amyloid growth: combining experiment and kinetic theory TUOMAS KNOWLES, SAMUEL COHEN, MICHELE VENDRUSCOLO, CHRISTOPHER DOBSON, University of Cambridge — The conversion of proteins from their soluble forms into fibrillar amyloid nanostructures is a general type of behaviour encountered for many different proteins in the context of disease as well as for the generation of a select class of functional materials in nature. This talk focuses on the problem of defining the rates of the individual molecular level processes involved in the overall conversion reaction. A master equation approach is discussed[1] [2] and used in combination with kinetic measurements to yield mechanistic insights into the amyloid growth phenomenon.

[1]Cohen et al, J Chem Phys 2011, 135, 065106
[2]Knowles et al, Science, 2009, 326, 1533-1537

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