COLLOQUIUM

The Dynamics of β-Amyloid Aggregation

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β-amyloid (Aβ) aggregates are the presumed neurotoxins leading Alzheimer's Disease (AD). Aggregation of Aβ and other amyloidogenic proteins yields polymorphic products, both soluble oligomers and fibrils. This contrasts with normal protein folding, in which a single amino acids sequences leads to a unique protein fold. In this talk, I will discuss the polymorphism and dynamics of β-amyloid aggregates. As time permits, I will briefly consider up to four related topics: 1) Structure and polymorphism of fibrils formed by seeding of Aβ solutions by authentic AD brain amyloid. 2) Modelling of these fibrils as aberrant aqueous pores. 3) "Chaotic" aggregation of an internal fragment of Aβ, Aβ16-34. 4) Formation of Aβ soluble oligomers as a second-order phase separation.