Good evening everyone,my name is chen-yu,yang

My Professor is **Chia-Ching ,Chou.**Today I will present my Research.

The Topic is Simulation and Analysis of Mechanical Properties for *Euplectella* sp. Skeleton.

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*Euplectella* sp.Skeleton:

1.It is a Deepwater sponge from the Western Pacific whose glassy skeleton is a hollow cylinder.

2.The structure look like intricate cagelike:6~32cm long,1.5~5 cm in diameter and cage is rigid. Main by silicon(SiO2).

3.Its surface structure is mainly composed of multilayered

Interwoven.(獨特性) This is where this structure is unique

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Advanced composite materials offer the designer considerable design freedom and unique functional performance, such as low weight specific strength and stiffness, this maybe bring innovation to future building materials.

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**Coarse-grained modeling, coarse-grained models, aim at simulating the behavior of complex systems using their coarse-grained (simplified) representation. Coarse-grained models are widely used for molecular modeling of biomolecules at various granularity levels.**

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1. K. R. Brown team find most of the stresses are concentrated at the nodes and in the middle of the beams.
2. Euplectella sp. Skeleton’s structure can decrease the effective length of longitudinal beams,thus preventing buckling of the latter under compressive loading.
3. Skeleton of E.aspergillum is characterized with an elaborate hierarchical organization .The multilayered improve the local energy-absorbing capacities.
4. The sub-structural design of irregular spicule-nodal point overlap imparts global strength and stiffness across the whole structure.