計算材料力學實驗室

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研究介紹：實驗室主要探討工程學及材料科學中界面移動穩定性的議題，包含仿生材料增韌機制、電極表面電化學穩定性，流固耦合於生物物理之應用。我們針對此類複雜系統，建構理論模型與數值計算方法，藉助圖形處理器(GPU)的平行運算處理，能有效率模擬與實驗尺度相仿的系統。 歡迎對於下列領域有興趣的同學加入實驗室。

- Linux系統
- 程式撰寫(python,c,cuda)
- High performance computing
- 數值模型推導與分析

研究方向：

- 仿生複合材料增韌機制
- 鋰電池電極表面電化學穩定性
- 流固雙向耦合於生物物理應用

代表著作：

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- H.-C. Tsai, C.-H. Chen*, Y.-C. Shu, Crack behavior in nacre-like composites: a phase-field method, Proc. SPIE 11586, Bioinspiration, Biomimetics, and Bioreplication XI, 2021.
- C.-H. Chen*, A. M. Tabrizi, P.-A. Geslin, and A. Karma. Dendritic needle network modeling of the Columnar-to-Equiaxed transition. Part II: three dimensional formulation, implementation and comparison with experiments. Acta Materialia, 2021.
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- S-J Chang, C.-H. Chen*, and K-C Chen. Assessment of the mechanical suppression of nonuniform electrodeposition in lithium metal batteries.Physical Chemistry Chemical Physics, 2022.