

Research Report (September, 2022- September, 2023)

Enrollment from
September 2021

Department of modern mechanical engineering

Yasutoshi Taniguchi

I. List of Papers

II. List of Talks

- a) **Y. Taniguchi**, K. Takizawa, and T.E. Tezduyar, "A validation of a new model for red blood cell membrane", in *Proceedings of JSME 33th Conference on Frontiers in Bioengineering*, Kobe, Japan, (2022).
- b) **Y. Taniguchi**, K. Takizawa, Y. Otoguro, and T.E. Tezduyar, "A Hyperelastic Extended Kirchhoff-Love Shell Model with Out-of-Plane Normal Stress: A Formulation for Incompressible Materials and its Isogeometric Analysis", in *Proceedings of the 28th Japan Society for Computational Engineering and Science Conference*, Ibaraki, Japan, (2023).

III. Research Results in AY2022

In FY2022, I did research on the computational implementation of a hyperelastic extended Kirchhoff-Love shell, which was published in a journal article in the spring of 2022. As a result, a computational implementation method was developed for the case where the shell material consists of incompressible materials.

IV. Research Plan for AY2023

The goals for this year are to publish the above research results in a journal article and to further validate the formulation of this shell model.