

# Math-Materials collaboration

A mathematical viewpoint is taken in, in order to accelerate the fusion research over a different field and bring a breakthrough to science and technology. Mathematics has a long tradition which have provided the common language to all the fields of science and technology. Furthermore, mathematics simplifies complicated and various phenomena and extracts principles from those phenomena. Such discovered principles make it possible to predict new functions and create new functional materials. Mathematics stimulates interdisciplinary fusion as a catalyst and enables us to create new materials science.

Such mathematics - materials science collaboration at the institution level is unprecedented anywhere else in the world.

- **Non-equilibrium Materials based on Mathematical Dynamical Systems**
- **Topological Functional Materials**
- **Multi-Scale Hierarchical Materials based on Discrete Geometric Analysis**