

**【Mathematics/Physics】**

<b>Title of Project</b>	New Quantum Phases of Matter in Multidimensional Environments
<b>Principal Investigator Name</b>	Yoshio Kitaoka, Osaka University, Graduate School of Engineering Science, Professor
<b>Abstract of Research Project</b>	In order to create the basic science and engineering of twenty-first century, it is necessary to investigate the new quantum phases of matter in multidimensional environment, especially in the research field of strongly correlated matter. Through this specially promoted research project, we address intriguing properties in the new quantum phases of matter and their physical backgrounds.
<b>Number of Researchers : 7</b>	Main targets are fundamental research aiming at the creation of novel quantum materials exhibiting cooperative and competitive effects of the typical quantum functions of materials, such as superconductivity, magnetism, and ferroelectricity, and the establishment of heretofore unexplored fundamental principles of materials science through the elucidation of new quantum functions of these materials;
<b>Term of Project: 2008-2012</b>	these will be achieved by combining evolutionary experimental techniques and theoretical analysis in an interdisciplinary approach .