Introduction

The Guest Chair for Advanced Interdisciplinary Modeling was established to research phenomena occurring in materials at the atomic levels. It aims to elucidate/control/design physical properties by investigating dynamical quantum processes in various reactions especially at surfaces, interfaces, carbon materials, and organic molecules. The results are widely applied in quantum devices such as fuel cells, spintronics, and solar cells, and recently in medical fields related to biosensors, photodynamic therapy, depigmentation therapy, and anti-tumor treatment. The group strongly believes that a universal understanding of these physical occurrences in materials is significant in order to unravel the challenging mysteries of this physical universe.