

4. 外国人特別研究員との共同研究の概要（外国人特別研究員との分担状況を明らかにした上で簡潔に記述してください。）

Summary of the collaborative research (Clarify your role and the Fellow's role in the collaborative research)

Dr. Kaneti's research focuses on the development of advanced electrode materials with high electrochemical performance for energy storage devices, such as supercapacitors, lithium-ion batteries, and sodium-ion batteries by utilizing porous nanomaterials/nanocomposites derived from metal-organic frameworks (MOFs). By tuning the composition, pore size, and morphology of the MOF precursors, he has successfully developed various porous oxide/carbon composites with high electrochemical performance and high stability for these energy storage devices.

In addition, Dr. Kaneti also performed additional research on the development of mesoporous oxide materials using several templates, such as MOFs and metal glycerates as well as soft templates, such as block copolymers and surfactants. In this collaborative research, Dr. Kaneti performed all the experiments, including synthesis, characterization, and electrochemical tests. He also mentored a master student and two exchange students from Bandung Institute of Technology (Indonesia). I acted as his mentor/supervisor in this collaborative research and my job is to check his research progress, to discuss with him about his research findings via face to face meeting and to check and revise his draft papers.

5. 外国人特別研究員との共同研究の成果とその評価

Results and Evaluation of the collaborative research

This collaborative research has been successful as indicated by Dr. Kaneti's performance over the two-year period of JSPS Fellowship. He has successfully published 28 journal articles, including 10 first-authored articles and 18 co-authored articles during his JSPS fellowship. Impressively, from these 28 papers, 13 papers were published in leading Materials Science and Chemistry journals with impact factor (IF) > 8.0, including Advanced Materials, ACS Nano, Angewandte Chemie International Edition, Nano Energy, Account of Chemical Research, Materials Horizons, Chemistry of Materials, Journal of Materials Chemistry, Small and ACS Applied Materials and Interfaces.

Furthermore, his research work on the development of highly effective catalyst for room-temperature carbon monoxide oxidation using two-dimensional mesoporous iron oxide nanoflakes has attracted interest from NIMS and Nikkei and the company NBC Mesh Tech. is in the process of applying a patent based on his work.