Cruise Summary

1. Cruise Information

- (1) Cruise ID: KS-21-13
- (2) Vessel: R/V SHINSEI MARU
- (3) Cruise Title

Interdisciplinary observations in the Tsushima Warm Current region in the Japan Sea. II Response of chemical and biological environment

(4) Chief Scientist

Shigeyoshi Otosaka (AORI, The University of Tokyo)

(5) Representative of the Science Party

S21-4 Shigeyoshi Otosaka (AORI, The University of Tokyo)

(6) Research Titles

S21-4 Interdisciplinary observations in the Tsushima Warm Current region in the Japan Sea. II Response of chemical and biological environment

(7) Cruise Period

2021/07/04 - 2021/07/14

- (8) **Ports of departure/call/arrival** Maizuru - Hachinohe
- (9) Research Area

Japan Sea

(10) Cruise Track



2. Overview of the Observation

This study was conducted as part of a comprehensive observation in the Japan Sea in order to predict the effects of global changes on chemical and biological processes in the ocean. Specific survey items were (1) detection of environmental change in the Japan Sea on a decadal scale, (2) understanding of the interactions between the meso- and submeso-scale eddies and vertical/lateral fluxes of various materials, and (3) assessment of response of the benthic community on the climate change and (4) tracking of the behavior of radionuclides.

In each item, seawater, benthic organisms, suspended particles, sinking particles, seabed sediments, etc. were collected. The dissolved gas components (dissolved oxygen and carbon dioxide) in seawater were analyzed in the laboratory on board. Various components such as environmental DNA, trace metal elements, and

radionuclides will be measured at onshore facilities. Based on these observations, the latest biogeochemical cycle in the Japan Sea can be outlined. Furthermore, the results obtained from a series of observations will be compared with the observation results of the past 30 years to clarify the impact on the biogeochemical cycle in the Japan Sea due to recent global environmental changes.