Field/Category	Technology	Product name/ Series name	Function/Role
	X-ray diffraction	SmartLab, MiniFlex	Examining the chemical composition of unearthed artifacts can provide the chemical grounds for forming hypotheses on how items were made and reexamining questions of where items were produced.
Forensics/ Archaeology/ Cultural Heritage	ст	<u>CT Lab series</u>	XCT can be used to confirm the contents of items without damaging them, enabling viewing of the interior of precious sites dating back centuries and even millennia. Items that can never be restored once broken can be examined with peace of mind. This technology can determine not only what a thing is but also the extent of its deterioration.
	X-ray Fluorescence	ZSX Primus series, Supermini200, NEX series, Niton series	By examining the elements in a work of art, the sources of materials can be discerned, and by extension trade routes identified. X-ray fluorescence spectrometry permits examination of precious artworks without damaging them.
Asbestos, Free silicic acid	X-ray diffraction	SmartLab, MiniFlex	Crystalline silica dust is recognized worldwide as a carcinogen. X-ray fluorescence spectrometry is garnering attention as a fast and reliable way of analyzing trace amounts of crystalline silica included in specimens. This device can detect crystalline silica in quantities as minute as ¼ the value rated by the Ministry of Health, Labour and Welfare (MHLW).
Soil, River	X-ray Fluorescence	ZSX Primus series, Supermini200 NEX series	The purpose of environmental monitoring is to monitor water quality and pollution levels in soils. X-ray fluorescence spectrometry contributes to multipoint analysis and evaluation through its ability to analyze elements quickly and easily.
△ Space	Thermal analysis	Thermo Mass Photo TG-DTA/GC-MS	By analyzing samples retrieved from the asteroid Ryugu by the Hayabusa 2 probe using thermal analyzers, scientists can learn the types of gas the asteroid emits and the temperatures and quantities at which it emits them. These measurement results are valuable in inquiring into the origins of the Earth and the solar system.
	X-ray Fluorescence	ZSX Primus IV	Analysis of the elements in rocks and minerals is essential in studying the evolution of planets and the structure of the Earth.In recent years, Rigaku has conducted element analysis on samples retrieved by the probe Hayabusa 2 from the asteroid Ryugu. Rigaku has identified 20 elements in these samples, including oxygen and carbon.
	X-ray Fluorescence	ZSX Primus IV	Rigaku has analyzed granules retrieved from Bennu, a type-B asteroid, by the NASA probe Osiris Rex. This analysis is expected to lead to discoveries about the history of Bennu and about similarities and differences between Bennu and the asteroid Ryugu.