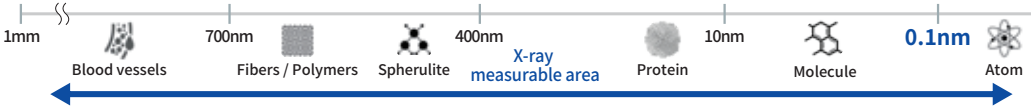
Electronic Device

Demand for high-performance electronic components is expanding in a wide range of product fields, including EVs, wearable devices and smartphones. Rigaku's technology contributes to improving the reliability and quality of these electronic components, through the evaluation of the fine structures of electronic components and the properties of materials.



Category	Technology	Scale	Product name / Series name	Function / Role
 Electronic device	Thermal analysis	–	STA DSC series TMA	Thermal analyzers are used to evaluate the thermal characteristics (melting point, rate of expansion, glass transition) of epoxy resins, ceramics and lead-free solders used in electronic circuit boards. They provide vital feedback on selection and compounding of materials and production processes.
	X-ray Imaging (CT)	10-500µm	CT Lab series	When electronic products fail, the cause of the failure must be isolated, and for this the product must normally be finely taken apart and sectioned. With XCT, however, these causes can be identified in a non-destructive manner, providing valuable feedback to prevent recurrence of the failure. Growing numbers of manufacturers are incorporating XCT into manufacturing processes for pass/failure judgment of products.
	X-ray Fluorescence	0.1nm	ZSX Primus series Supermini200 NEX series	The use of hazardous substances such as lead and mercury in electronic devices is subject to restrictions, requiring confirmation through receiving inspection at production sites. X-ray fluorescence spectrometry enables these hazardous substances to be detected easily and non-destructively.
	Monocrystalline structural analysis	0.1nm	Synergy series (XRD) Synergy-ED	The machines we depend on in our daily lives use large numbers of electronic components. Semiconductors, magnetic bodies and luminescent materials are representative examples. When these materials are crystalline in nature, their structure can be elucidated in detail using single crystal structural analysis, which can tell us which alignments of crystals affect which properties of materials. This information plays a valuable role in the design and manufacture of new electronic components.
	Mercury Analysis	–	MA series	The RoHS Directive restricts the use of mercury in electronic and electrical equipment. Mercury from the eletronics can be extracted and measured in MA series through through thermal decomposition, gold amalgamation and CVAAS measurement.