

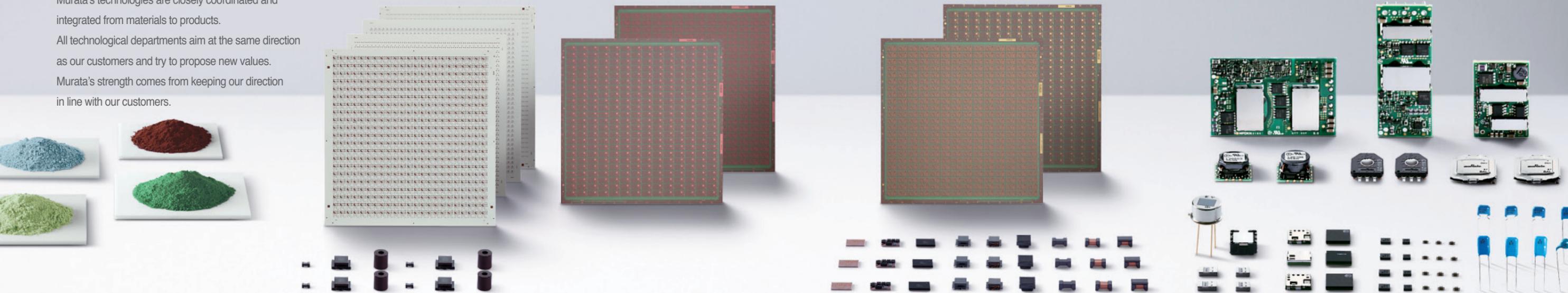
# Murata's Core Competence

All technologies are directly in line with our markets and customers.

Murata's technologies are closely coordinated and integrated from materials to products.

All technological departments aim at the same direction as our customers and try to propose new values.

Murata's strength comes from keeping our direction in line with our customers.



[Murata's manufacturing technologies]

Materials

Murata has established a technology to precisely control ceramic materials and electrode materials that critically determine the property of electronic components.



Forming

From 1 μm thick ceramic sheets to complexly shaped filters created by injection forming, we pursue "the functional shape".



Firing

When fired, ceramic's crystal structure shifts to achieve certain properties. Firing is a technique to control these invisible changes inside a furnace.



Processing

Once they have gained electric properties from the previous processes through firing, ceramics are formed into electronic components through various additional processing.



Finish

Once completed, products are delivered to users only if rigorous testing proves that they live up to their Murata label.



[Murata's core technologies] Core competence upholding Murata's manufacturing

Material technology

Developing new materials from scratch while keeping 10 years in the future in view

It is Murata's trait and strength to vertically integrate all manufacturing technologies surrounding electronics, such as materials, components and modules. What determines the future of technologies depends on an accumulation of seed technologies in the upstream processes, namely those pertaining to ceramic and organic materials. We are striving to develop materials with various characteristics drafting a roadmap for the world with 10 years from now in our view.



Murata Manufacturing Co., Ltd.  
Materials Technology Center,  
Technology & Business  
Development Unit  
Hayato Katsu

Layering technology

Total technology for making products with the smallest size and the greatest capacity

Layering technology is applied to a process to form prepared ceramic materials into extremely thin sheets and to configure electrodes and stack numerous layers. Over the years of developing and producing monolithic ceramic capacitors, Murata has been thoroughly refining this technology. Our advantage comes from maintaining well-balanced refinement in all processes. This allows us to offer excellent QCD in totality for markets where smaller size and large capacitance are in increasing demand.



Murata Manufacturing Co., Ltd.  
New Process Development Center,  
Technology & Business  
Development Unit  
Kazuhiro Tabata

Production technology

Murata's proprietary technologies accumulated at original in-house facilities

In principle, Murata develops and builds original in-house production facilities. For example, I was responsible for implementing a visual inspection unit to ensure built-in quality and quality assurance through a unique image-processing algorithm. We need production lines and facilities to meet the product concepts in order to create and propose new values in electronics, and come up with new products as a result. This is also the source of Murata's competitiveness.



Murata Manufacturing Co., Ltd.  
New Process Development Center,  
Technology & Business  
Development Unit  
Ryo Nishiki

Radio frequency technology

A technology for communication tomorrow

Murata's high-frequency filters and communication modules that integrate those filters are behind mobile device innovations evidenced by the rapid evolution of smartphones and tablets. Many of Murata's modules designed with original LTCC design technology and simulation technology are integrated in small advanced equipment. We strive to develop new technologies to meet future needs of society by always staying ahead of our times.



Murata Manufacturing Co., Ltd.  
Multilayer Products Dept.,  
Communication Business Unit  
Atsushi Ono