

Various achievements of TIA



Social Implementation	<h3>Nanoelectronics</h3> <p>Electronics/Communication network</p>	<h3>Power electronics</h3> <p>High efficiency power devices</p>	<h3>MEMS</h3> <p>Infrastructure monitoring</p>	<h3>Nano-GREEN</h3> <p>Battery for EV</p>	<h3>Light/quantum measurement</h3> <p>Innovative structural materials</p>	<h3>Biotechnology / healthcare</h3> <p>Advanced medical care</p>	<h3>Carbon nanotubes (CNT)</h3> <p>Advanced functional materials</p>
Commercialization	<p>Demonstration experiment in space (2019)</p> <p>AIO Core Co., Ltd. established in April 2017</p> <p>Minimal Fab</p> <p>NEC Nanobridge® -FPGA engineering sample</p>	<p>SiC power module for Shinkansen N700 by Fuji Electric Co., Ltd.</p> <p>Solar power conditioner</p> <p>SiC device production-line with 6" wafers in the Matsumoto-Works of Fuji Electric Co., Ltd.</p>	<p>Ultra-thin three-axis force sensor by Touchence Corp.</p> <p>Social infrastructure monitoring</p> <p>Ultra low power wireless sensor node</p>	<p>Battery for EV</p>	<p>Innovative structural materials</p>	<p>Advanced medical care</p> <p>Algal Bio Co., Ltd. established (Mar. 2018)</p>	<p>Advanced functional materials</p> <p>Commercial O-rings "SGOINT" released by Sunarrow Ltd. (Oct. 2018)</p> <p>Heat-resistant O-rings composited with CNT</p> <p>Construction of manufacturing plant by Zeon Corporation</p>
Demonstration	<p>Atom switch integrated Si-LSI</p> <p>Optical Switch System in a Testbed Network</p> <p>Optical I/O Core</p>	<p>SiC device production-line with 6" wafers in the Matsumoto-Works of Fuji Electric Co., Ltd.</p> <p>A manufacturing line for SiC devices</p> <p>Original packages for SiC power devices</p>	<p>Social infrastructure monitoring</p> <p>Ultra low power wireless sensor node</p> <p>Self-powered MEMS vibration sensor</p>	<p>Battery for EV</p>	<p>Innovative structural materials</p>	<p>Advanced medical care</p> <p>Algal Bio Co., Ltd. established (Mar. 2018)</p>	<p>Advanced functional materials</p> <p>Commercial O-rings "SGOINT" released by Sunarrow Ltd. (Oct. 2018)</p> <p>Heat-resistant O-rings composited with CNT</p> <p>Construction of manufacturing plant by Zeon Corporation</p>
Applied research & development	<p>1M Spin-device integrated circuit</p> <p>EUV mask inspection system for hp16nm</p> <p>Large Port Count Optical Switch Chip</p> <p>Si optical interposer</p> <p>3D nano-carbon interconnect</p> <p>Phase change device TRAM</p> <p>DSA process for hp15nm</p> <p>Ge nanowire MISFET</p> <p>Vertical tunnel FET</p>	<p>SiC device production-line with 6" wafers in the Matsumoto-Works of Fuji Electric Co., Ltd.</p> <p>A manufacturing line for SiC devices</p> <p>Original packages for SiC power devices</p> <p>Manufacturing technology for 6" SiC wafers</p> <p>Development of innovative power electronics application through trial sample devices</p> <p>Mass-pro manufacturing process SiC devices</p> <p>Ultra-high voltage devices IGBT 16kV / PIN diode 13 kV</p> <p>High-voltage switching devices (3.3 kV planer MOS structure)</p>	<p>Social infrastructure monitoring</p> <p>Ultra low power wireless sensor node</p> <p>Self-powered MEMS vibration sensor</p> <p>8/12 inch MEMS fabrication line</p> <p>Mass production process for piezoelectric MEMS</p>	<p>Battery for EV</p> <p>Development of the first high-k/diamond transistor</p> <p>Lithium air rechargeable battery</p> <p>Perovskite solar cell</p>	<p>Innovative structural materials</p> <p>Application of Energy Recovery Linac</p> <p>Multiscale multidimension advanced measurement</p> <p>X-ray absorption fine structure computed tomography</p> <p>X-ray emission spectroscopy imaging</p> <p>Mechanoluminescence fracture dynamics imaging</p>	<p>Advanced medical care</p> <p>Algal Bio Co., Ltd. established (Mar. 2018)</p> <p>Nanairo chlorella, next generation functional food</p> <p>Development of glycan-targeted drugs and diagnosis</p> <p>Laparoscopic hepatectomy navigation system</p> <p>Raman spectroscopic imaging of brown adipocytes</p>	<p>Advanced functional materials</p> <p>Commercial O-rings "SGOINT" released by Sunarrow Ltd. (Oct. 2018)</p> <p>Heat-resistant O-rings composited with CNT</p> <p>Construction of manufacturing plant by Zeon Corporation</p> <p>The large-area continuous SWCNT industrial mass production pilot plant</p> <p>Nano-material safety research</p> <p>Development of new applications by providing SWCNT composite samples</p> <p>Carbon nanotube capacitor development project</p>
Basic research	<p>Ge nanowire MISFET</p> <p>Vertical tunnel FET</p>	<p>SiC device production-line with 6" wafers in the Matsumoto-Works of Fuji Electric Co., Ltd.</p> <p>A manufacturing line for SiC devices</p> <p>Original packages for SiC power devices</p> <p>Manufacturing technology for 6" SiC wafers</p> <p>Development of innovative power electronics application through trial sample devices</p> <p>Mass-pro manufacturing process SiC devices</p> <p>Ultra-high voltage devices IGBT 16kV / PIN diode 13 kV</p> <p>High-voltage switching devices (3.3 kV planer MOS structure)</p> <p>R&D for SiC devices</p>	<p>Social infrastructure monitoring</p> <p>Ultra low power wireless sensor node</p> <p>Self-powered MEMS vibration sensor</p> <p>8/12 inch MEMS fabrication line</p> <p>Mass production process for piezoelectric MEMS</p> <p>R&D of piezoelectric MEMS process</p>	<p>Battery for EV</p> <p>Development of the first high-k/diamond transistor</p> <p>Lithium air rechargeable battery</p> <p>Perovskite solar cell</p> <p>Bottom-up synthesis of thermoelectric nanomaterials</p> <p>Growth of single crystal thin film of all solid-state battery materials</p> <p>Development of in situ characterization of solid/liquid interfacial reaction and battery reaction</p> <p>Discovery of a novel catalyst for fuel cells</p>	<p>Innovative structural materials</p> <p>Application of Energy Recovery Linac</p> <p>Multiscale multidimension advanced measurement</p> <p>X-ray absorption fine structure computed tomography</p> <p>X-ray emission spectroscopy imaging</p> <p>Mechanoluminescence fracture dynamics imaging</p> <p>Innovation of sensing technology with SOI</p> <p>NDI by cosmic-ray muonradiography</p>	<p>Advanced medical care</p> <p>Algal Bio Co., Ltd. established (Mar. 2018)</p> <p>Nanairo chlorella, next generation functional food</p> <p>Development of glycan-targeted drugs and diagnosis</p> <p>Laparoscopic hepatectomy navigation system</p> <p>Raman spectroscopic imaging of brown adipocytes</p> <p>Development of bioabsorbable membrane</p>	<p>Advanced functional materials</p> <p>Commercial O-rings "SGOINT" released by Sunarrow Ltd. (Oct. 2018)</p> <p>Heat-resistant O-rings composited with CNT</p> <p>Construction of manufacturing plant by Zeon Corporation</p> <p>The large-area continuous SWCNT industrial mass production pilot plant</p> <p>Nano-material safety research</p> <p>Development of new applications by providing SWCNT composite samples</p> <p>Carbon nanotube capacitor development project</p> <p>Super-growth method was developed</p>