

# Main Patents

## ■ Patents registered in 2013

Registration Number	Name	Inventor(s)
Patent 5244620	Fan System	Yoshinori Miyabara, Jirou Watanabe, Hiromitsu Kuribayashi
Patent 5244895	Generator Core	Toshihito Miyashita
Patent 5255851	Parallel Inverter System	Yoshiaki Okui
Patent 5256174	Magnetic Absolute Encoder	Shigeharu Katou, Kazuhiro Makiuchi, Shouji Itou, Tooru Miyajima, Tomohito Yamazaki, Masato Matsuda, Toshiaki Ayuzawa
Patent 5256184	Counter-Rotating Axial Flow Fan	Honami Osawa, Yoshihiko Aizawa, Co-invented with the University of Tokyo, FUJITSU Japan
Patent 5265591	Linear Synchronous Motor	Yu Qi Tang, Satoshi Sugita
Patent 5270139	Housing	Toshiya Nishizawa, Yasuhiro Maruyama, Hayato Murayama
Patent 5270450	Storage for Long Objects	Nobuya Ootsuki
Patent 5281803	Stator for Motor	Toshihito Miyashita, Hiroshi Hioki
Patent 5281822	Stator for Rotary Electric Machine	Ikuo Takeshita, Shigenori Miyairi
Patent 5281916	Small-Sized Motor	Daigo Kuraishi, Akira Shimizu
Patent 5306089	Motor	Yukio Miura, Mitsuaki Shioiri
Patent 5331523	Controller for Three-Phase Synchronous Electric Motor with Faulty Wiring Detecting Function	Yuji Ide
Patent 5331747	Rack Frame and Rack	Yuzo Kubota
Patent 5351246	Motor Control System	Yuji Ide
Patent 5354687	Moving Magnetic Field Generating Apparatus	Satoshi Sugita, Kouji Misawa, Yu Qi Tang, Shigenori Miyairi
Patent 5356488	Movable Assembly for Linear Motor	Yu Qi Tang, Satoshi Sugita, Satoru Onodera
Patent 5364303	Current Controlled Power Converter and Method of Improving Output Current Waveform of Current Controlled Power Converter	Akinori Matsuzaki, Takashi Kobayashi
Patent 5378009	Electric Fan	Yoshihiro Wada, Michinori Watanabe
Patent 5378316	Optical Encoder Device	Yoshihiro Shoji
Patent 5386353	Counter-Rotating Axial-Flow Fan	Toshiyuki Nakamura, Atsushi Yanagisawa, Katsumichi Ishihara
Patent 5386564	Electronic Component Cooling Apparatus	Tomoaki Ikeda, Masashi Miyazawa, Masayuki Iijima, Kouji Ueno, Co-invented with Intel Corporation
Patent 5396497	Power Management System, Uninterruptible Power Supply System, Lan Card for Uninterruptible Power Supply System, Shutdown Control Device and Shutdown Control Method	Toshio Saito, Yutaka Kato
Patent 5399470	Armature for Linear Motor	Satoshi Sugita, Kouji Misawa
Patent 5406345	Motor Control System Including Electrical Insulation Deterioration Detecting System	Yuji Ide
Patent 5411331	Motor Control System	Yuji Ide
Patent 5415161	Linear Synchronous Motor	Yu Qi Tang, Satoshi Sugita
Patent 5426229	Motor System	Masao Mizuguchi, Ryuuta Sugiyama, Kouhei Yamaura
Patent 5427845	Power Supply System	Yoshiaki Okui
Patent 5438383	Molded Motor	Toshihito Miyashita, Hiroshi Hioki, Masakazu Chikyu

<b>Patent 5438498</b>	Linear Synchronous Motor	Yu Qi Tang, Satoshi Sugita
<b>Patent 5438537</b>	Electrical Apparatus	Haruhisa Maruyama, Tomoaki Ikeda, Takahisa Toda
<b>Patent 5442078</b>	Motor Control System Including Electrical Insulation Deterioration Detecting System	Yuji Ide, Masahisa Koyama, Yoshihisa Kubota
<b>Patent 5462906</b>	Motor Control System	Yuji Ide, Satoshi Yamazaki
<b>Patent 5463273</b>	Linear Actuator	Kouji Nakatake, Kazuyuki Kitazawa, Shigenori Miyairi
<b>Patent 5480351</b>	Motor Control System	Yuji Ide, Satoshi Yamazaki
<b>Patent 5484861</b>	Linear Motor	Satoshi Sugita, Kouji Misawa, Yu Qi Tang
<b>Patent 5484949</b>	Motor Control Method and Motor Control System	Yuji Ide
<b>Patent 5485121</b>	Linear Actuator	Shigenori Miyairi, Kouji Nakatake
<b>Patent 5489963</b>	Electrical Apparatus with Built-In Fan Unit and Fan Unit	Yoshitsugu Kashiwagi, Tetsuo Sezai, Co-invented with NEC Fielding, Ltd.
<b>EP Patent 1191661</b>	Uninterruptible Power System	Yoshiaki Okui
<b>EP Patent 2124321</b>	Movable Assembly for Cylinder-Type Linear Motor	Yu Qi Tang, Satoshi Sugita
<b>EP Patent 2333379</b>	Linear Actuator	Kouji Nakatake, Kazuyuki Kitazawa, Shigenori Miyairi
<b>EP Patent 2362287</b>	Motor Control Method and Motor Control System	Yuji Ide
<b>EP Patent 2482091</b>	Motor Condition Inspection Method and Motor Characteristic Inspecting Device	Akihiko Takahashi
<b>U.S. Patent 8421319</b>	Bearing Holder Mounting Structure and Motor	Yukio Miura, Mitsuaki Shioiri
<b>U.S. Patent 8487485</b>	Linear Synchronous Motor	Yu Qi Tang, Satoshi Sugita
<b>U.S. Patent 8526013</b>	Batteryless Absolute Encoder	Kazuhiro Makiuchi, Tomohito Yamazaki, Tooru Miyajima, Shigeharu Katou, Toshiaki Ayuzawa
<b>U.S. Patent 8536467</b>	Connecting Structure for Electric Cables and Electric Apparatus	Toshihito Miyashita, Hiroshi Hioki, Masakazu Chikyu
<b>U.S. Patent 8536742</b>	Linear Synchronous Motor	Yu Qi Tang, Satoshi Sugita
<b>U.S. Patent 8556593</b>	Method of Controlling Counter-Rotating Axial-Flow Fan	Honami Osawa, Naruhiko Kudou, Yoshihiko Aizawa
<b>U.S. Patent 8562297</b>	Centrifugal Fan	Kevin Yen, Hiromitsu Kuribayashi
<b>U.S. Patent 8569916</b>	Electrical Machine Apparatus	Satoshi Sugita, Kouji Misawa, Yu Qi Tang
<b>U.S. Patent 8581453</b>	Electric Fan	Yoshihiro Wada, Michinori Watanabe
<b>U.S. Patent 8587244</b>	Method and System for Determining Deterioration of Permanent Magnets of Electric Apparatus	Akihiko Takahashi, Kouji Misawa, Manabu Horiuchi
<b>U.S. Patent 8616864</b>	Axial Flow Fan	Toshiyuki Nakamura, Masahiro Koike, Naoya Inada
<b>U.S. Patent 8651807</b>	Fan with Reduced Noise	Naoya Inada, Toshiyuki Nakamura, Ogawara Toshiki, Yoshinori Miyabara
<b>Korea Patent 10-1312467</b>	Stator for Rotary Electric Machines	Masaaki Oohashi, Kouji Nakatake, Yasushi Yoda
<b>Korea Patent 10-1334089</b>	Rotor for Motors	Toshihito Miyashita
<b>Korea Patent 10-1346075</b>	Motor Rotor and Manufacturing Method Thereof	Toshihito Miyashita, Takashi Matsushita, Norihito Tanaka
<b>Taiwan Patent I391564</b>	Axial-Flow Fan	Katsumichi Ishihara, Honami Osawa, Masashi Miyazawa, Tomoaki Ikeda
<b>Taiwan Patent I391567</b>	Axial-Flow Fan	Masashi Miyazawa, Ogawara Toshiki, Tomoaki Ikeda
<b>Taiwan Patent I398076</b>	Rotor for Motors	Toshihito Miyashita
<b>Taiwan Patent I400856</b>	Motor Rotor and Manufacturing Method Thereof	Toshihito Miyashita, Takashi Matsushita, Norihito Tanaka
<b>Taiwan Patent I402427</b>	Counter-Rotating Axial-Flow Fan	Katsumichi Ishihara, Honami Osawa
<b>Taiwan Patent I411199</b>	Linear Motor	Yu Qi Tang, Satoshi Sugita

<b>Taiwan Patent I413348</b>	Brushless Fan Motor	Naoki Murakami, Hiromitsu Kuribayashi, Katsumichi Ishihara
<b>China Patent ZL200880122373.9</b>	Method of Controlling Counter-Rotating Axial-Flow Fan	Honami Osawa, Naruhiko Kudou, Yoshihiko Aizawa
<b>China Patent ZL200910149339.7</b>	Current Controlled Power Converter and Method of Improving Output Current Waveform of Current Controlled Power Converter	Akinori Matsuzaki, Takashi Kobayashi
<b>China Patent ZL200910160269.5</b>	Motor Control System	Yuji Ide
<b>China Patent ZL200910166026.2</b>	Linear Synchronous Motor	Yu Qi Tang, Satoshi Sugita
<b>China Patent ZL200910167351.0</b>	Motor Control System	Yuji Ide
<b>China Patent ZL200910203974.9</b>	Motor with an Electromagnetic Brake	Toshihito Miyashita, Masahiro Yamaguchi
<b>China Patent ZL200910204601.3</b>	Molded Motor	Toshihito Miyashita, Hiroshi Hioki, Masakazu Chikyu
<b>China Patent ZL200910253276.X</b>	Linear Synchronous Motor	Yu Qi Tang, Takashi Matsushita, Satoshi Sugita
<b>China Patent ZL200980124016.0</b>	Axial Flow Fan	Toshiyuki Nakamura, Masahiro Koike, Naoya Inada
<b>China Patent ZL200980130238.3</b>	Bearing Holder Mounting Structure and Motor	Yukio Miura, Mitsuaki Shioiri
<b>China Patent ZL200980157785.0</b>	Armature for Linear Motor	Satoshi Sugita, Kouji Misawa
<b>China Patent ZL201010126472.3</b>	Electrical Apparatus	Haruhisa Maruyama, Tomoaki Ikeda, Takahisa Toda
<b>Philippine Patent 1-2006-000557</b>	Axial-Flow Fan	Katsumichi Ishihara, Honami Osawa, Masashi Miyazawa, Tomoaki Ikeda
<b>Philippine Patent 1-2008-000417</b>	Electronic Component Cooling Apparatus	Tomoaki Ikeda, Masashi Miyazawa, Masayuki Iijima, Kouji Ueno, Co-invented with Intel Corporation
<b>Philippine Patent 1-2009-000320</b>	Brushless Motor Stator	Izumi Onozawa, Masashi Miyazawa
<b>Hong Kong Patent HK1154998</b>	Bearing Holder Mounting Structure and Motor	Yukio Miura, Mitsuaki Shioiri

## Internal Recognition: Invention Grand Prize (Excellence Award)

May 2013 Commendations

Prize	Title of Paper	Division	Name
<b>Excellence Award</b>	High-speed Response Controller for Servo Motors	Servo Systems Division, 2nd Design Dept.	Yuji Ide
<b>Excellence Award</b>	Low Power Consumption Fan Motor Controller	Cooling Systems Division, Design Dept.	Takahisa Toda You Muramatsu
<b>Excellence Award</b>	Low-Cost, High-Performance Linear Motor	Servo Systems Division, 1st Design Dept. Servo Systems Division, 1st Design Dept.	Yu Qi Tang Satoshi Sugita
<b>Excellence Award</b>	Low-Noise Utility Connected Power System	Power Systems Division, 2nd Design Dept. Power Systems Division, 2nd Design Dept.	Narumi Yanagisawa Hiroshi Yamada