

**FY2022 RIEC Nation-Wide Cooperative Research Projects List**

Grant No.	Implementation Year	Sub theme	Title of Research	PI	PI's Affiliation	Co-researchers	Research Collaborator of RIEC
<b>[Type A] 71 Research Projects</b>							
R02/A01	3	②	Development of graphene based devices for terahertz applications	MEZIANI Yahya Moubarak	Salamanca University	5	OTSUJI Taiichi
R02/A02	3	④	Analyses and mathematical modeling of the function of artificial neuronal circuit	TANII Takashi	Waseda University	8	YAMAMOTO Hideaki
R02/A03	3	①	Development of optoelectronic devices based on two-dimensional materials	UCHINO Takashi	Tohoku Institute of Technology	3	OTSUJI Taiichi
R02/A04	3	①	Spin transport and magnetism in 2D van der Waals ferro and antiferromagnets	Singh Ravi Prakash	Indian Institute of Science Education and Research Bhopal	4	FUKAMI Shunsuke
R02/A05	3	④	New Group-IV Semiconductor Materials and Highly-Integrated Device Process	SAKURABA Masao	Tohoku University	26	SAKURABA Masao
R02/A10	3	①	Investigation of physical structure model of high-k/Ge interface affected by fabrication processes	OTANI Yohei	Suwa University of Science	6	SATO Shigeo
R02/A11	3	①	Single-crystal graphene functional device	NAGASE Masao	Tokushima University	3	OTSUJI Taiichi
R02/A13	3	③	Ultra-low-latency video coding for 8K high-resolution image sensing	Matsumura Tetsuya	Nihon University	2	OTSUJI Taiichi
R02/A14	3	②	Development of Wireless Massive Connect IoT	OGUMA Hiroshi	National Institute of Technology, Toyama College	7	SUEMATSU Noriharu
R02/A15	3	②	A study on over 100GHz-band/optical fiber feed direct digital RF transceiver	SUEMATSU Noriharu	Tohoku University	9	SUEMATSU Noriharu
R02/A16	3	②	Study on development of millimeter wave antenna using 3D printer	ITOH Keiichi	National Institute of Technology, Akita College	5	SUEMATSU Noriharu
R02/A18	3	③	Modeling the Japanese-Taiwanese racial effect in facial expression recognition	CHEN Chien-Chung	National Taiwan University	7	TSENG Chia-huei
R02/A19	3	③	Development of device modules that embed sensors onto objects and its application	MANABE Hiroyuki	Shibaura Institute of Technology	5	TAKASHIMA Kazuki
R02/A20	3	③	Understanding and reconstruction of minimal brain	KAMIYA Haruyuki	Hokkaido University	9	HIRANO Ayumi
R02/A21	3	④	The shape variation of human pinna and its effect on the acoustical transfer function.	ITO Masashi	Tohoku Institute of Technology	3	SAKAMOTO Shuichi
R02/A22	3	④	Research on the development of a new generation IoT platform	ZABIR Salahuddin Muhammad Salim	National Institute of Technology, Tsuruka College	2	HASEGAWA Go
R02/A23	3	④	Exploring and Understanding Touch Interaction using a Slidable-Sheet on Smart Devices	KAZUYUKI Fujita	Tohoku University	3	KAZUYUKI Fujita
R02/A24	3	③	Investigating cultural issues for the design of touch-based interactive D-FLIP photo management system	CHINTAKOVID/Thippaya	Chulalongkorn University	4	KITAMURA Yoshifumi
R02/A25	3	④	Multimodal Data Flow Processing Platform for Enhancing Human Abilities	MINENO Hiroshi	Shizuoka University	10	HASEGAWA Go
R02/A29	3	③	Cultural background and auditory selective attention	KIM Sungyoung	Rochester Institute of Technology	3	SAKAMOTO Shuichi
R02/A31	3	③	Constructive research on nonlinear complex systems and development of their theories	HORIO Yoshihiko	Tohoku University	36	HORIO Yoshihiko
R02/A32	3	③	Determinants of multisensory auditory space perception	HONDA AKio	Shizuoka Institute of Science and Technology	3	SAKAMOTO Shuichi
R03/A01	2	①	Radiation effect study on spintronics devices for space applications	WATANABE Kyota	Japan Aerospace Exploration Agency	4	FUKAMI Shunsuke
R03/A02	2	①	Development of Multi-Functional Integrated Circuit on Si/Ge Hybrid Platform	YAMAMOTO Keisuke	Kyushu University	13	SAKURABA Masao
R03/A03	2	①	Control of spin dynamics in non-magnetic materials	ISHIHARA Jun	Tokyo University of Science	4	KANAI Shun
R03/A04	2	①	Creation of Bio-Medical Devices Utilizing Non-Equilibrium Plasma-Producing Reactive Species	KANEKO Toshiro	Tohoku University	17	HIRANO Ayumi
R03/A05	2	①	Heusler magnetic Weyl semimetal :Toward a voltage-controlled non-volatile magnetic memory	Chiba Takahiro	National Institute of Technology, Fukushima College	2	TSUJIKAWA Masahito
R03/A06	2	①	R&D on radiation response of quantum devices	KISHIMOTO Yasuhiro	Tohoku University	3	OTSUKA Tomohiro
R03/A07	2	①	Development of Quantum Device based on Atomically Thin Layered Materials	KATO Toshiaki	Tohoku University	4	OTSUKA Tomohiro
R03/A09	2	②	Research of on-chip THz array antenna for ultra-wideband communication	KANAYA Haruichi	Kyushu University	4	SUEMATSU Noriharu
R03/A10	2	②	High frequency chaos circuits using resonant tunneling diodes and their applications	MAEZAWA Koichi	University of Toyama	8	OTSUJI Taiichi
R03/A11	2	②	Millimeter-wave large-scale array antenna for wireless terminal application	Satoshi Yoshida	Kagoshima University	5	SUEMATSU Noriharu
R03/A12	2	②	Study on energy harvesting and meta-surface applied for 5G / IoT	MARUYAMA Tamami	National Institute of Technology, Hakodate College	7	SUEMATSU Noriharu
R03/A13	2	②	Study of delay-sensitive and seamless access networks using widely frequency selectable optoelectronics integrated devices	YOSHIMOTO Naoto	Chitose Institute of Science and Technology	5	OTSUJI Taiichi
R03/A14	2	③	Mixed Reality for IoT and Robotics: Opportunities and Challenges for Immersive Human-Robot Interaction	SUZUKI Ryo	University of Calgary	2	KITAMURA Yoshifumi
R03/A15	2	③	Reconfigurable Head-Mounted Displays Enabling Real-world Interactions	KIYOKAWA Kiyoshi	Nara institute of science and technology	5	KITAMURA Yoshifumi

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R03/A16	2	③	An investigation on spatio-temporal characteristics of auditory selective attention	TERAOKA Ryo	Kumamoto University	4	SAKAMOTO Shuichi
R03/A17	2	③	Study on sound space perception under limited binaural cue condition	MORIKAWA Daisuke	Toyama Prefectural University	4	SAKAMOTO Shuichi
R03/A20	2	④	Neuromorphic Systems using Thin-Film Memcapacitors	KIMURA Mutsumi	Ryukoku University	16	HORIO Yoshihiko
R03/A22	2	④	IoT security technologies	OGUMA Hiroshi	National Institute of Technology, Toyama College	4	HOMMA Naofumi
R03/A23	2	④	Development of Advanced Harmonized Agent Platform	UCHIYA Takahiro	Nagoya Institute of Technology	13	SAKAMOTO Shuichi
R03/A25	2	①	Creation of device informatics and application to Beyond 5G devices	FUKIDOME Hirokazu	Tohoku University	15	FUKIDOME Hirokazu
R03/A26	2	①	Quantum research based on integration of experimental, theoretical and data science	FUKUHARA Takeshi	RIKEN	6	OTSUKA Tomohiro
R03/A27	2	②	Investigation of contactless power transmission in a long distance	INAMORI Mamiko	Tokai University	7	SUEMATSU Noriharu
R03/A28	2	③	Embodiment of space perception: anisotropy and individual difference	TERAMOTO Wataru	Kumamoto University	3	SAKAMOTO Shuichi
R03/A29	2	③	Application of high-performance soft magnetic alloys to advanced devices	SUZUKI Shigeru	Tohoku University	6	ISHIYAMA Kazushi
R03/A30	2	③	Effects of body vibration generated from audio-visual signal on perceived reality in multimodal contents	CUI Zhenglie	Aichi University of Technology	2	SAKAMOTO Shuichi
R03/A31	2	③	Research on the formation of a gravity observation network using optical communication technologies and the monitoring of volcanic activities	KASAI Keisuke	Tohoku University	9	KASAI Keisuke
R03/A32	2	③	Hardware Technology for Brain Computing and its Application to Edge Computing	SATO Shigeo	Tohoku University	28	SATO Shigeo
R04/A01	1	①	Coplanar waveguide size and magnetization angle dependence of magnetization dynamics in CoFeB-MgO magnetic tunnel junction structure measured by spin rectification ferromagnetic resonance	Eli Christopher Inocencio Enobio	Mindanao State University-Iligan Institute of Technology	2	FUKAMI Shunsuke
R04/A02	1	①	Development of intraluminal NMR receive coil for high field MRI	LEE Sang-Seok	Tottori University	3	SUEMATSU Noriharu
R04/A03	1	①	Japan-Russia International collaborative research on boosting a performance of a large-area THz photoconductive emitter	DMITRY Ponomarev	Institute of ultra high frequency semiconductor electronics of Russian academy of sciences	6	OTSUJI Taichi
R04/A04	1	①	Study on Silicidation Reaction of Metal Nanodots with SiH <sub>4</sub>	MIYAZAKI Seiichi	Nagoya University	6	SATO Shigeo
R04/A05	1	①	Study of magnetic, dielectric and optical properties of nanomaterials for Terahertz applications	AMINE EI Moutaouakil	United Arab Emirates University	4	OTSUJI Taichi
R04/A06	1	①	Electron transport through single colloidal quantum dot coupled to nanogap metal electrodes	SHIBATA Kenji	Tohoku Institute of Technology	2	OTSUKA Tomohiro
R04/A07	1	①	Database and its machine learning for development of next generation electromagnetic noise suppressors	MUROGA Sho	Akita University	6	ISHIYAMA Kazushi
R04/A08	1	①	High Frequency Response of Submicron-Sized Magnetic Materials with Asymmetric Magnetic Vortex Structure	KODA Tetsunori	National Institute of Technology, Oshima College	4	ISHIYAMA Kazushi
R04/A09	1	①	Fabrication of spintronic devices based on antiperovskite-type metallic films with light elements	SHINJI Isogami	National Institute for Materials Science	9	SHIRAI Masafumi
R04/A10	1	②	Japan-USA International Collaborative Research on the Theoretical and Experimental Investigation of Coulomb Drag Instability of Graphene Dirac Plasmons and its Application for THz Laser Transistors	MITIN Vladimir	University at Buffalo, The State University of New York	3	OTSUJI Taichi
R04/A11	1	②	Development of diamond RF high power devices and circuits for post-5G base station	KANEKO Junichi H	Hokkaido University	5	SUEMATSU Noriharu
R04/A12	1	③	Manipulation of sense of self using multisensory information	TANAKA Akihiro	Tokyo Woman's Christian University	2	SAKAMOTO Shuichi
R04/A13	1	③	Exploring and designing interactions for VR headsets using smartphone interfaces	BOUSTILA Sabah	Manchester Metropolitan University, School of Digital Art	4	TAKASHIMA Kazuki
R04/A14	1	③	Online-based visual psychophysics and shared modeling environment	SAKAI Ko	Tsukuba University	9	SHIOIRI Satoshi
R04/A15	1	③	Estimation of attention states during learning	SHIOIRI Satoshi	Tohoku University	4	SHIOIRI Satoshi
R04/A16	1	③	Study on application of facial expression analysis to remote medical care	SATO Yoshiyuki	Tohoku University	6	SHIOIRI Satoshi
R04/A17	1	①	Creation, manipulation, and electrical control of chiral spin textures in non-collinear antiferromagnetic heterostructures	TRETIKOV/Oleg	University of New South Wales, School of Physics	3	FUKAMI Shunsuke
R04/A18	1	①	Development of electrochemiluminescence microscopy for visualization of active biointerfaces	HIRAMOTO Kaoru	Tohoku University	4	HIRANO Ayumi
R04/A19	1	①	Study of Superconducting Nanowire for Single Photon Detection	MIMA Satoru	National Institute of Information and Communications Technology	15	SATO Shigeo
R04/A20	1	③	Interpersonal coordination of motor, cognitive and neurophysiological processes in joint activities	CHENG Miao	Tohoku University	7	CHENG Miao
R04/A21	1	③	Propagation directivity of wireless body area network	AKIMOTO Kohei	Akita Prefectural University	4	SUEMATSU Noriharu
R04/A22	1	③	An Exploratory Study to Build an Environment for Collaborative HyFlex Classes" Utilizing XR Technology"	HAYASHI Masako	Tohoku University	13	KITAMURA Yoshifumi



Select Type

Type A

Type B

Type S

Type SI

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Grant No.	Implementation Year	Sub theme	Title of Research	PI	PI's Affiliation	Co-researchers	Research Collaborator of RIEC
<b>[Type B] 32 Research Projects for Seminar</b>							
R02/B02	3	②	Coherent Communication and Measurement Systems Incorporating Lightwave and Microwave	INOUE Takashi	National Institute of Advanced Industrial Science and Technology	17	HIROOKA Toshihiko
R02/B03	3	②	Layerless Design of Future Wireless Communications and Its Applications	ISHIBASHI Koji	The University of Electro-Communications	33	SUEMATSU Noriharu
R02/B04	3	②	Research on Wireless Technologies for the Beyond-5G System	KUKI Takao	Kokushikan University	27	SUEMATSU Noriharu
R02/B06	3	③	Spatial User Interface by Understanding Human's Physical and Spatial Behaviors	YAMAMOTO Goshiro	Kyoto University	10	TAKASHIMA Kazuki
R02/B07	3	③	Human / Social Sensing Infrastructure by Heterogeneous Data Fusion	OKABE Yasuo	Kyoto University	12	OTSUJI Taiichi
R02/B11	3	③	Development for automation of crows' behavior control method using vocal communication	TSUKAHARA Naoki	CrowLab Inc	5	KITAMURA Yoshifumi
R02/B12	3	④	International Research Collaboration of Brainware LSI and Its Emerging Technologies	HANYU Takahiro	Tohoku University	9	HANYU Takahiro
R02/B14	3	③	Self-motion perception and multisensory integration in 3D space	SAKURAI Kenzo	Tohoku Gakuin University	19	SAKAMOTO Shuichi
R02/B15	3	③	Measurement and control of the functions of lipid bilayer membrane and membrane proteins based on microfabrication technology and nanomaterials	TERO Ryugo	Toyohashi University of Technology	5	HIRANO Ayumi
R03/B01	2	①	Development of new physical phenomena at interfaces brought on by electron spins, orbitals and multipoles	MIURA Yoshio	National Institute for Materials Science	13	SHIRAI Masafumi
R03/B03	2	③	A method for modeling of intellectual productivity and computational intervention for productivity enhancement	ITOH Yuichi	Aoyama Gakuin University	6	TAKASHIMA Kazuki
R03/B04	2	③	Functionalization of oxide surfaces and its application to biosensor devices	HIROSE Fumihiko	Yamagata University	12	HIRANO Ayumi
R03/B05	2	③	High-dimensional and spatiotemporal neurodynamics and its system applications	HIROSE Akira	Tokyo University	16	SATO Shigeo
R03/B06	2	③	Theory and implementation for control-less wireless power supply systems	SEKIYA Hiroo	Chiba University	11	HORIO Yoshihiko
R03/B07	2	③	A Study on Adaptive Workspaces in the After-Corona Era	KAZUYUKI Fujita	Tohoku University	10	KAZUYUKI Fujita
R03/B08	2	④	A study of the Application of Evolutionary Computation to Machine Learning	JINNO Kenya	Tokyo City University	17	HORIO Yoshihiko
R03/B09	2	④	Study of perceptual, motor, cognitive, and emotional human characteristics towards the understanding of the neural mechanisms of social behavior	TSUTSUI Ken-Ichiro	Tohoku University	29	SHIOIRI Satoshi
R03/B11	2	③	Mental imagery processing in people with aphantasia	TAKAHASHI Junichi	Fukushima University	8	SAKAMOTO Shuichi
R03/B12	2	④	Empirical Research on Ubiquitous Computing Systems	ISHIDA Shigemi	Future University Hakodate	23	HASEGAWA Go
R04/B01	1	①	Research on magnetic devices for advanced information system by controlling multiscale structure of magnetic material	IKEDA Shinji	Komatsu University	21	ISHIYAMA Kazushi
R04/B02	1	①	Emergence of novel spin dynamics in solids and its device applications	KOHDA Makoto	Tohoku university	22	KANAI Shun
R04/B03	1	①	Nanomaterial synthesis by using novel gas-phase processes and its applications to high-performance devices	UCIDA Giichiro	Meijo University	9	SATO Shigeo
R04/B04	1	①	Control and exploitation of functions of quantum materials towards device applications	MATSUNO Jobu	Osaka University	17	FUKAMI Shunsuke
R04/B05	1	②	Studies on Antenna Technologies and Electromagnetic Analysis Methods for Developing Core of The Next Generation Wireless Systems	KONNO Keisuke	Tohoku University	6	SUEMATSU Noriharu
R04/B06	1	③	Designing the Next Normal of Academic Conferences	KITAMURA Yoshifumi	Tohoku University	13	KITAMURA Yoshifumi
R04/B07	1	③	Theory of object recognition in vision and audition	KURIKI Ichiro	Saitama University	5	SAKAMOTO Shuichi
R04/B08	1	③	Workgroup on fundamental technologies and issues of surface unmanned vehicles for sustainable society	SUEDA Koh	SENSEFOIL PTE.LTD.	5	KITAMURA Yoshifumi
R04/B09	1	④	Studies on Generative Technology for Enriched Multimedia	SONODA Kotaro	Nagasaki University	20	SAKAMOTO Shuichi
R04/B10	1	④	Application study on microwave and laser SAR	KOGI Yuichiro	Fukuoka Institute of Technology	17	YASAKA Hiroshi
R04/B11	1	③	An Inter-personal Dimension of MA: Behavior, Physiology, and Engineering	TSENG Chia-huei	Tohoku University	8	TSENG Chia-huei
R04/B12	1	④	Research of the fundamental technologies of edge computing and edge-assisted smart systems for smart city	SHAO Xun	Kitami Institute of Technology	4	HASEGAWA Go
R04/B13	1	④	Graph Content Visualization Techniques and Navigation Interfaces for Indoor Maps	KAZUYUKI Fujita	Tohoku University	5	KAZUYUKI Fujita

Select Type

Type A

Type B

Type S

Type SI

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Grant No.	Implementation Year	Sub theme	Title of Research	PI	PI's Affiliation	Co-researchers	Research Collaborator of RIEC
<b>[Type S] Inter-organizational Collaboration Projects</b>							
R02/S1	3	②	Establishment for innovative coherent wave technology and its applications	AOKI Toru	Shizuoka University, Research Institute of Electronics	21	YASAKA Hiroshi
<b>[Type SI] Inter-organizational International Collaboration Projects</b>							
R03/SI01	2	③	Human sciences with AI technologies	Su-Ling Yeh	National Taiwan University, AI and Advanced Robotics Center	25	SHIOIRI Satoshi
<b>[Type T] 12 Study Groups for Fostering Students Project (Study Groups on Electrical Communication)</b>							
T04/T01	1	-	Electromagnetic-Wave Transmission Technologies Workshop (Electromagnetic- and light-wave transmission technologies toward Society 5.0)	YAMADA Hirohito	Tohoku University	47	KASAI Keisuke
T04/T02	1	-	Technical committee for acoustic engineering (Research presentation on basic and application of acoustics, speech, hearing and multimodal systems)	SAKAMOTO Shuichi	Tohoku University	9	SAKAMOTO Shuichi
T04/T03	1	-	Tohoku Plasma Forum (Fundamentals and applications of non-equilibrium plasma phenomena)	KANEKO Toshiro	Tohoku University	30	HIRANO Ayumi
T04/T04	1	-	Special Interest Group on Computer Science (Foundation and Application of Information Science around Theoretical Computer Science)	SUMII Eijiro	Tohoku University	16	NAKANO Keisuke
T04/T05	1	-	Technical committee for system control (Research presentation on theory and applications of system control)	WATANABE Takashi	Tohoku University	17	ISHIGURO Akio
T04/T06	1	-	Information Biotronics Seminar (Next generation biodevices based on bio-nanoelectronics)	HIRANO Ayumi	Tohoku University	11	HIRANO Ayumi
T04/T07	1	-	Spinics Research Society (Development of Magnetic Materials and Their Magnetic Applications)	YABUKAMI Shin	Tohoku University	14	ISHIYAMA Kazushi
T04/T08	1	-	New Paradigm Computing Research Group (Research and development of new paradigm computing technologies for the next generation IoT society)	HARIYAMA Masanori	Tohoku University	32	NATSUI Masanori
T04/T09	1	-	Technical committee for ultrasonic electronics (Research presentation on basics and applications of ultrasound)	KANAI Hiroshi	Tohoku University	12	SAKAMOTO Shuichi
T04/T10	1	-	Brainware Research Project (Toward Life-like Intelligent Information Processing System)	ISHIGURO Akio	Tohoku University	10	ISHIGURO Akio
T04/T11	1	-	Biocybernetics and Bioinformatics (Analysis and modelling of biological signals)	SHIOIRI Satoshi	Tohoku University	5	HATORI Yasuhiro
T04/T12	1	-	Study Group on Nanoelectronics and Spintronics (Next-generation information and communication technology based on nanoelectronics and spintronics)	SATO Shigeo	Tohoku University	20	FUKAMI Shunsuke