FY2023 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
[Type A] 78 Research Projects							
R03/A02	3	①	Development of Multi-Functional Integrated Circuit on Si/Ge Hybrid Platform	YAMAMOTO Keisuke	Kyushu University	13	SAKURABA Masao
R03/A03	3	①	Control of spin dynamics in non-magnetic materials	ISHIHARA Jun	Tokyo University of Science	6	KANAI Shun
R03/A04	3	①	Creation of Bio-Medical Devices Utilizing Non-Equilibrium Plasma-Producing Reactive Species	KANEKO Toshiro	Tohoku University	17	HIRANO Ayumi
R03/A06	3	①	R&D on radiation response of quantum devices	KISHIMOTO Yasuhiro	Tohoku University	3	OTSUKA Tomohiro
R03/A07	3	①	Development of Quantum Device based on Atomically Thin Layered Materials	KATO Toshiaki	Tohoku University	4	OTSUKA Tomohiro
R03/A09	3	②	Research of on-chip THz array antenna for ultra-wideband communication	KANAYA Haruichi	Kyushu University	3	SUEMATSU Noriharu
R03/A10	3	②	High frequency chaos circuits using resonant tunneling diodes and their applications	MAEZAWA Koichi	University of Toyama	7	OTSUJI Taiichi
R03/A11	3	②	Millimeter-wave large-scale array antenna for wireless terminal application	Satoshi Yoshida	Kagoshima University	5	SUEMATSU Noriharu
R03/A12	3	②	Study on energy harvesting and meta-surface applied for 5G / IoT	MARUYAMA Tamami	National Institute of Technology, Hakodate College	14	SUEMATSU Noriharu
R03/A13	3	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	3	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	3	③	Reconfigurable Head-Mounted Displays Enabling Real-world Interactions	KIYOKAWA Kiyoshi	Nara institute of science and technology	6	KITAMURA Yoshifumi
R03/A16	3	③	An investigation for the spatio-temporal characteristics of auditory selective attention	TERAOKA Ryo	Kumamoto University	6	SAKAMOTO Shuichi
R03/A17	3	③	Study on sound space perception under limited binaural cue condition	MORIKAWA Daisuke	Toyama Prefectural University	3	SAKAMOTO Shuichi
R03/A20	3	④	Neuromorphic Systems using Thin-Film Memcapacitors	KIMURA Mutsumi	Ryukoku University	16	HORIO Yoshihiko
R03/A22	3	④	IoT security technologies	OGUMA Hiroshi	National Institute of Technology, Toyama College	3	HOMMA Naofumi
R03/A23	3	④	Development of Advanced Harmonized Agent Platform	UCHIYA Takahiro	Nagoya Institute of Technology	13	SAKAMOTO Shuichi
R03/A25	3	①	Creation of device informatics and its application to Beyond 5G devices	FUKIDOME Hirokazu	Tohoku University	15	FUKIDOME Hirokazu
R03/A26	3	①	Quantum research based on integration of experimental, theoretical and data science	FUKUHARA Takeshi	RIKEN	5	OTSUKA Tomohiro
R03/A27	3	②	Investigation of contactless power transmission in a long distance	INAMORI Mamiko	Tokai University	8	SUEMATSU Noriharu
R03/A28	3	③	Embodiment of space perception: anisotropy and individual difference	TERAMOTO Wataru	Kumamoto University	4	SAKAMOTO Shuichi
R03/A30	3	④	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	3	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	3	③	Hardware Technology for Brain Computing and its Application to Edge Computing	SATO Shigeo	Tohoku University	28	SATO Shigeo
R04/A01	2	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	3	FUKAMI Shunsuke
R04/A04	2	①	Study on Silicidation Reaction of Metal Nanodots with SiH4	MIYAZAKI Seiichi	Nagoya University	8	SATO Shigeo
R04/A05	2	①	Study of magnetic, dielectric and optical properties of nanomaterials for Terahertz applications	AMINE El Moutaouakil	United Arab Emirates University	3	OTSUJI Taiichi
R04/A06	2	①	Electron transport through single colloidal quantum dot coupled to nanogap metal electrodes	SHIBATA Kenji	Tohoku Institute of Technology	2	OTSUKA Tomohiro
R04/A08	2	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	2	①	Development of efficient magnetization-switching devices using transition metal compounds	SHINJI Isogami	National Institute for Materials Science	10	SHIRAI Masafumi
R04/A10	2	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 Taiichi
R04/A11	2	②	Development of Diamond High-Frequency High-Power Devices and Circuits for Post-5G Base Stations	KANEKO Junichi H	Hokkaido University	5	SUEMATSU Noriharu
R04/A12	2	③	Manipulation of sense of self using multisensory information	TANAKA Akihiro	Tokyo Woman's Christian University	4	SAKAMOTO Shuichi
R04/A13	2	③	Exploring and designing interactions for VR headsets using smartphone interfaces	BOUSTILA Sabah	Manchester Metropolitan University	4	TAKASHIMA Kazuki
R04/A14	2	③	Online-based visual psychophysics and shared modeling environment	SAKAI Ko	Tsukbua University	11	SHIOIRI Satoshi
R04/A15	2	③	Estimation of attention states during learning	SHIOIRI Satoshi	Tohoku University	5	SHIOIRI Satoshi
R04/A16	2	③	Study on application of facial expression analysis to remote medical care	SATO Yoshiyuki	Tohoku University	5	SHIOIRI Satoshi
R04/A17	2	①	Creation, manipulation, and electrical control of chiral spin textures in non-collinear antiferromagnetic heterostructures	TRETIAKOV/Oleg	University of New South Wales	3	FUKAMI Shunsuke

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R04/A19	2	①	Study of Superconducting Nanowire for Single Photon Detection	MIMA Satoru	National Institute of Information and Communications Technology	15	SATO Shigeo
R04/A20	2	③	Interpersonal coordination of motor, cognitive and neurophysiological processes in joint activities	CHENG Miao	Tohoku University	5	CHENG Miao
R04/A21	2	③	Propagation directivity of wireless body area network	AKIMOTO Kohei	Akita Prefectural University	5	SUEMATSU Noriharu
R04/A22	2	③	An Exploratory Study to Build an Environment for Collaborative HyFlex Classes" Utilizing XR Technology"	HAYASHI Masako	Tohoku University	17	KITAMURA Yoshifumi
R05/A01	1	①	Study on graphene emitter	NAGASE Masao	Tokushima University	3	OTSUJI Taiichi
R05/A02	1	①	Development of Fundamental Technology of Materials and Processes for New Group-IV Semiconductor Nanoelectronics	SAKURABA Masao	Tohoku University	37	SAKURABA Masao
R05/A03	1	①	Development of a sensitive TiO_2 nanotube gas sensor	KIMURA Yasuo	Tokyo University of Technology	13	HIRANO Ayumi
R05/A04	1	①	Development of intraluminal NMR probe for high magnetic field MRI	MATSUNAGA Tadao	Tottori University	3	SUEMATSU Noriharu
R05/A05	1	①	Fundamental Survey on Measurement of Intraoral Bite Force Using Inverse Magnetostrictive and Magneto-Optical Effects	ISOGAI Ryosuke	Seiko Future Creation Inc.	4	GOTO Taichi
R05/A06	1	①	2D van der Waals quantum materials for efficient charge-spin conversion	Singh Ravi Prakash	Indian Institute of Science Education and Research Bhopal	4	FUKAMI Shunsuke
R05/A07	1	①	Japan-Russia International collaborative research of new designs of high-power large-area photoconductive antenna-emitters	DMITRY Ponomarev	Institute of ultra high frequency semiconductor electronics of Russian academy of sciences	6	OTSUJI Taiichi
R05/A08	1	①	Investigation of physical structure model of high-k/Ge interface affected by process temperatures	OTANI Yohei	Suwa University of Science	5	SATO Shigeo
R05/A09	1	①	Study on plasmonic nanodevices based on two-dimensional materials	UCHINO Takashi	Tohoku Institute of Technology	3	OTSUJI Taiichi
R05/A10	1	①	Current-induced orbital effects in magnetic heterostructures	DUTTAGUPTA SAMIK	Saha Institute of Nuclear Physics	4	FUKAMI Shunsuke
R05/A11	1	②	Survey of over100GHz direct digital transceiver technology	SUEMATSU Noriharu	Tohoku University	8	SUEMATSU Noriharu
R05/A12	1	②	Study on optimization design of milli-meter wave devices and transmission lines	ITOH Keiichi	National Institute of Technology, Akita College	5	SUEMATSU Noriharu
R05/A13	1	②	New generation of 2d material based devices for terahertz technology	MEZIANI Yahya Moubarak	Salamanca University	5	OTSUJI Taiichi
R05/A14	1	③	Collaborative evaluation of non-verbal communication solutions	Benjamin WATSON	North Carolina State University	3	CHENG Miao
R05/A15	1	③	Practice of experiential on-the-job training using VR equipment in the field of occupational health	IROKAWA Toshiya	Tohoku University	5	KITAMURA Yoshifumi
R05/A16	1	③	Research on dynamic VR/AR workspaces for inducing physical movements	TAKAHARA Ryo	TATAMI inc.	3	KAZUYUKI Fujita
R05/A17	1	③	Auditory influences on saccadic suppression	Hiu Mei CHOW	St. Thomas University	3	TSENG Chia-huei
R05/A18	1	③	Constructive analysis of brain computing based on multicellular networks	TANII Takashi	Waseda university	9	YAMAMOTO Hideaki
R05/A19	1	③	Expansion of nonlinear complex systems theory to spatiotemporal systems and its applications	HORIO Yoshihiko	Tohoku University	36	HORIO Yoshihiko
R05/A20	1	③	Characterization of microstructure and properties of high-performance soft magnetic iron alloys	SUZUKI Shigeru	Tohoku University	5	ISHIYAMA Kazushi
R05/A21	1	③	New development of multicellular neurobiocomputing	KAMIYA Haruyuki	Hokkaido University	8	YAMAMOTO Hideaki
R05/A22	1	④	Motion Unit: A data-driven study on bodily emotion expressions	FUJIWARA Ken	National Chung-Cheng University	4	CHENG Miao
R05/A23	1	④	Research of the fundamental technologies of edge computing and edge-assisted smart systems for smart city	SHAO Xun	Toyohashi University of Technology	2	HASEGAWA Go
R05/A24	1	④	Research on Autopoietic Service Platform Supporting Smart Society	KITAGATA Gen	Morioka University	13	HASEGAWA Go
R05/A25	1	④	High precision phase locking technologies for quantum key distribution	HIRANO Takuya	Gakushuin University	6	YOSHIDA Masato
R05/A26	1	④	Investigating the impact of physical activity in virtual reality on cognitive performance	Tag Benjamin	Monash University	4	KITAMURA Yoshifumi
R05/A27	1	④	Research on online text analysis using machine learning	ZABIR Salahuddin Muhammad Salim	National Institute of Technology, Tsuruka College	2	HASEGAWA Go
R05/A28	1	②	Deep learning based object detection for ultra high resolution image sensing	Matsumura Tetsuya	Nihon University	2	OTSUJI Taiichi
R05/A29	1	①	Fabrication of magnetic garnet ultrafine particles for flexible magneto-optical films	HASHIMOTO Ryosuke	National Institute of Technology (KOSEN), Suzuka College	5	GOTO Taichi
R05/A30	1	①	Research and development of heterogeneous optoelectronic integration technology	KITA Tomohiro	Waseda university	3	SATOU Akira
R05/A31	1	③	Discovering a relationship between auditory attention and auditory immersion	KIM Sungyoung	Rochester Institute of Technology	4	SAKAMOTO Shuichi
R05/A32	1	③	Enhancing Non-Verbal Communication through Facial Expression and Gestures using Generative AI	PUNPONGSANON Parinya	Osaka University	3	KITAMURA Yoshifumi
R05/A33	1	③	Emotion processing in real and cyber world: behavioral and neuroscience perspective	Monica Perusquia Hernandez	Nara Institute of Science and Technology	3	CHENG Miao
R05/A34	1	③	A computational model for the gender and culture interaction effect on facial expression classification	CHEN Chien-Chung	National Taiwan University	4	TSENG Chia-huei
R05/A35	1	③	Development of automated sound environment recognition system with decentralized autonomous organization type structure	TAKANE Shouichi	Tohoku Bunka Gakuen University	5	SAKAMOTO Shuichi
R05/A36	1	④	Performance Evaluation of Congestion Control Algorithms on Real Network Environments	UTSUMI Satoshi	Fukushima University	2	HASEGAWA Go

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【Type B】38 Research Projects for Seminar							
R03/B01	3	①	Experimental and theoretical studies of new physical phenomena at interfaces brought on by electron spins, orbitals and multipoles	MIURA Yoshio	National Institute for Materials Science	16	SHIRAI Masafumi
R03/B02	3	②	Reserach on advanced optical space mode control	HAMAMOTO Kiichi	Kyushu University	7	YOSHIDA Masato
R03/B03	3	③	A method for modeling of intellectual productivity and computational intervention for productivity enhancement	ITOH Yuichi	Aoyama Gakuin University	6	TAKASHIMA Kazuki
R03/B04	3	③	Functionalization of oxide surfaces and its application to biosensor devices	HIROSE Fumihiko	Yamagata University	11	HIRANO Ayumi
R03/B05	3	③	High-dimensional and spatiotemporal neurodynamics and its system applications	HIROSE Akira	Tokyo University	16	SATO Shigeo
R03/B06	3	③	Theory and implementation for control-less wireless power supply systems	SEKIYA Hiroo	Chiba University	11	HORIO Yoshihiko
R03/B07	3	③	A Study on Adaptive Workspaces in the After-Corona Era	KAZUYUKI Fujita	Tohoku University	12	KAZUYUKI Fujita
R03/B08	3	④	A study of the Application of Evolutionary Computation to Machine Learning	JINNO Kenya	Tokyo City University	17	HORIO Yoshihiko
R03/B09	3	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	30	SHIOIRI Satoshi
R03/B11	3	③	Mental imagery processing in people with aphantasia	TAKAHASHI Junichi	Fuskushima University	8	SAKAMOTO Shuichi
R03/B12	3	④	Empirical Research on dic Ubiquitous Computing Systems	ISHIDA Shigemi	Future University Hakodate	21	HASEGAWA Go
R04/B01	2	①	Research on magnetic devices for advanced information system by controlling multiscale structure of magnetic mate	IKEDA Shinji	Komatsu University	21	ISHIYAMA Kazushi
R04/B03	2	①	Nanomaterial production by using novel gas-phase process and its application to high-performance devices	UCIDA Giichiro	Meijo University	9	SATO Shigeo
R04/B04	2	①	Control and exploartion of functions of quantum materials towards device applications	MATSUNO Jobu	Osaka University	17	FUKAMI Shunsuke
R04/B05	2	②	Studies on Antenna Technologies and Electromagnetic Analysis Methods for Developing Core of The Next Generation Wireless Systems	KONNO Keisuke	Tohoku University	7	SUEMATSU Noriharu
R04/B06	2	③	Designing the Next Normal of Academic Conferences	MURAYAMA Hiromi	Pacific Convention Plaza Yokohama	11	KITAMURA Yoshifumi
R04/B07	2	③	Theory of object recognition in vision and audition	KURIKI Ichiro	Saitama University	5	SAKAMOTO Shuichi
R04/B08	2	③	Workgroup on fundamental technologies and issues of surface unmanned vehicles for sustainable society	SUEDA Koh	SENSEFOIL PTE.LTD.	4	KITAMURA Yoshifumi
R04/B09	2	④	Studies on Generative Technology for Enriched Multimedia	SONODA Kotaro	Nagasaki University	22	SAKAMOTO Shuichi
R04/B10	2	④	Application study on microwave and laser SAR	KOGI Yuichiro	Fukuoka Institute of Technology	16	YASAKA Hiroshi
R04/B11	2	③	An Inter-personal Dimension of MA: Behavior, Physiology, and Engineering	TSENG Chia-huei	Tohoku University	8	TSENG Chia-huei
R05/B01	1	②	Design of Borderless Wireless Networks for Digital Twin Society	SATO Koya	The University of Electro-Communications	37	SUEMATSU Noriharu
R05/B02	1	②	Integrated Design of Wireless Communication System and Hardware in the Massive Connect IoT Era	KAMEDA Suguru	Hiroshima University	17	SUEMATSU Noriharu
R05/B03	1	②	Highly Functional Coherent Communication and Measurement Systems Integrating Lightwave and Microwave	INOUE Takashi	National Institute of Advanced Industrial Science and Technology	17	HIROOKA Toshihiko
R05/B04	1	②	Millimeter-wave and Terahertz Wave Technologies and Applications for 6G System	SANADA Atsushi	Osaka University	22	SUEMATSU Noriharu
R05/B05	1	③	Amplification and Attenuation Effects on Actions and Emotions in Human-Computer Interaction	NAKAKOJI Kumiyo	Future University Hakodate	15	KITAMURA Yoshifumi
R05/B06	1	③	Physical / Virtual Presentations	Mario DOULIS	Merz Akademie Stuttgart	2	KITAMURA Yoshifumi
R05/B07	1	③	Integration process of multi-sensory information in self-motion perception	SAKURAI Kenzo	Tohoku Gakuin University	17	SAKAMOTO Shuichi
R05/B08	1	③	Study of methods for guiding a flock of crows	TSUKAHARA Naoki	CrowLab Inc	9	KITAMURA Yoshifumi
R05/B09	1	③	Development of device modules using 3D printer and its application	MANABE Hiroyuki	Shibaura Institute of Technology	6	TAKASHIMA Kazuki
R05/B10	1	③	Spatial Informatics by Understanding Human's Physical and Spatial Behaviors	YAMAMOTO Goshiro	Kyoto University	10	TAKASHIMA Kazuki
R05/B11	1	③	Development and control of artificial cell membrane systems for measuring membrane protein functions based on semiconductor microfabrication technology and nanomaterial functions	TERO Ryugo	Toyohashi University of Technology	4	HIRANO Ayumi
R05/B12	1	③	Elucidation of tactics mechanism between sheep and sheepdog in shepherding phenomenon	TSUNODA Yusuke	Osaka University	16	KANO Takeshi
R05/B13	1	④	Theoretical studies on memory and learning in neural networks	IKEGUCHI Tohru	Tokyo University of Science	11	HORIO Yoshihiko
R05/B14	1	④	Research on direct manipulation interface for document-based videos	KAZUYUKI Fujita	Tohoku University	6	KAZUYUKI Fujita
R05/B15	1	④	Research on fundamental technologies related to human and social sensing and intervention	ARAKAWA Yutaka	Kyushu University	16	OTSUJI Taiichi
R05/B16	1	④	Study on applications using head-gaze tracking technique with a smartphone	KAZUYUKI Fujita	Tohoku University	2	KAZUYUKI Fujita
R05/B17	1	④	International Research Collaboration of Brainware-LSI-Oriented Emerging Circuits/Systems	HANYU Takahiro	Tohoku University	11	HANYU Takahiro

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【Type S】 Inter-organizational Collaboration Projects							
R05/S01	1	-	Establishment for innovative coherent wave technologyand its applications	AOKI Toru	Shizuoka University, Research Institute ofElectronics	22	YASAKA Hiroshi
【Type SI】 Inter-organizational International Collaboration Projects							
R03/SI01	3	-	Human sciences with AI technologies	Su-Ling Yeh	National Taiwan University, AI andAdvanced Robotics Center	19	SHIOIRI Satoshi
【Type T】 12 Study Groups for Fostering Students Project (Study Groups on Electrical Communication)							
R04/T01	2	-	Electromagnetic-Wave Transmission Technologies Workshop (Electromagnetic- and light-wave transmission technologies toward Society 5.0)	MATSUURA Yuji	Tohoku University	48	KASAI Keisuke
R04/T02	2	-	Technical committee for acoustic engineering（Research presentation on basic and application of acoustics, speech, hearing and multimodal system）	SAKAMOTO Shuichi	Tohoku University	8	SAKAMOTO Shuichi
R04/T03	2	-	Tohoku Plasma Forum (Fundamentals and applications of non-equilibrium plasma phenomena)	KANEKO Toshiro	Tohoku University	28	HIRANO Ayumi
R04/T04	2	-	Special Interest Group on Computer Science (Foundation and Application of Information Science around Theoretical Computer Science)	SUMII Eijiro	Tohoku University	16	NAKANO Keisuke
R04/T05	2	-	Technical committee for system control（Research presentation on theory and applications of system control）	WATANABE Takashi	Tohoku University	17	ISHIGURO Akio
R04/T06	2	-	Information Biotronics Seminar（Next generation biodevices based on bio-nanoelectronics）	HIRANO Ayumi	Tohoku University	13	HIRANO Ayumi
R04/T07	2	-	Spinics Research Society (Development of Magnetic Materials and Their Magnetic Applications)	YABUKAMI Shin	Tohoku University	14	ISHIYAMA Kazushi
R04/T08	2	-	New Paradigm Computing Research Group（Research and development of new paradigm computing technologies for the next generation IoT society）	HOMMA Naofumi	Tohoku University	49	HOMMA Naofumi
R04/T09	2	-	Technical committee for ultrasonic electronics（Research presentation on basics and applications of ultrasound）	YOSHIZAWA Shin	Tohoku University	12	SAKAMOTO Shuichi
R04/T10	2	-	Brainware Research Project（Toward Life-like Intelligent Information Processing System）	ISHIGURO Akio	Tohoku University	10	ISHIGURO Akio
R04/T11	2	-	Biocybernetics and Bioinformatics（Analysis and modelling of biological signals）	SHIOIRI Satoshi	Tohoku University	4	HATORI Yasuhiro
R04/T12	2	-	Study Group on Nanoelectronics and Spintronics（Next-generation information and communication technology based on nanoelectronics and spintronics）	SATO Shigeo	Tohoku University	26	FUKAMI Shunsuke