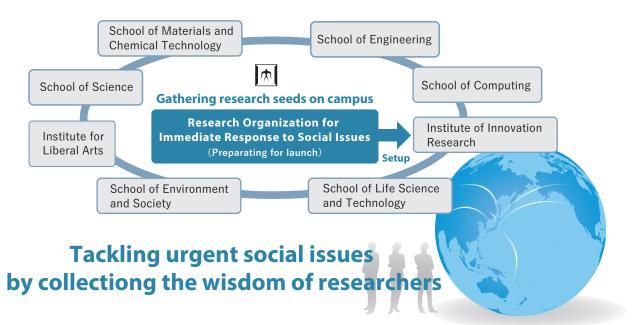
Research Project for Overcoming COVID-19 Disasters at Tokyo Institute of Technology

Research Organization for Immediate Response to Social Issues

Infectious disease COVID-19, caused by a new type of coronavirus (SARS-CoV-2), has driven major cities around the world into lockdown, threatens human life, and has led to various social crises. The question of how to counteract the virus with science and technology is truly an urgent research subject matter for universities to address. While the center of the research against viruses lies in pharmaceutical and medical science, there are also plenty of issues that should be dealt with to counter the viral scourge through the integration of different fields and the collaboration of a wide range of science and technology. The Institute of Innovative Research proposes the establishment of a "**Research Organization for Immediate Response to Social Issues**" to promote research on important social issues, as well as to contribute to the creation of a prosperous future society. There will be a short-term focus of one year for applied research and a mid-term plan of about three years for basic research so that the IIR will be able to respond rapidly to social issues, such as disasters caused by COVID-19.



Project No.1 Research Project for Overcoming Coronavirus Disasters

Fighting against social issue with wisdom

The project addresses issues related to COVID-19 as the first concrete research project of the Research Organization for Immediate Response to Social Issues launched on June 5, 2020.



There are many issues to be addressed, including not only the urgent need to develop vaccines and therapeutic drugs, but also medical devices, future predictions, work styles, and understanding of the New Normal in order to solve the social problems caused by the coronavirus ravages. It is also important to consider the "substance of the problem" which needs the power of both science and technology and the humanities and social sciences to deal with, and this project is going to collaborate with Tokyo Tech D-Lab that is aiming to create a brighter, more prosperous world. In this project, the following 21 research projects are currently underway, and collaborations between several research projects have already started.

Contents and Collaborations

Diagnostics and Vaccines	New Normal
Viral test High precision diagnostic	Human nature and altruism ina post-corona society
Chemically modified fluorescent immunosensors =	New Normal working environment
A diagnostic device for SARS-CoV-2	Work Style Reform
Diagnosis using VL Biological detection methods using MRI/NMR probes	P Video conferencing service that allows
Inhibitors for bioactive proteins derived from SARS-CoV-2	Technology that contributes to the improvement of the telework environment
Optical Analysi	Future Projections
Micro devices for fluorescence immune sensing –	Observation of social and economic phenomena in the spread of COVID-19 and future predictions based on models
Medical Devices	Virus Removal and Inactivation
Magnetically levitated centrifugal blood pumps for ECMO and its multifunctional use	Rapid and non-contact inactivation of coronaviruses with low-temperature plasma
Flexible near-infrared image sensors	An air purification device with large capacity
Remote vital sensing	Highly structurally controlled porous carbon material and its application to remove toxic
Calibration of odor delivery system for anosmia diagnosis	substances Growth inhibitors of SARS-CoV-2
Advanced artificial hear	t — Examination of highly sanitary DLC coating
	Antiviral material using borophene

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