

E Tokyo Metropolitan Research Institute for **Environmental Protection**



Tokyo Environmental Public Service Corporation
Tokyo Metropolitan Research Institute for Environmental Protection

- ① “Study the environmental situation”
- ② “Examine new environmental policies”
- ③ “Verify the effects of environmental policy”

Research and study

The TMRIEP is engaged in research and study (R&S) which contribute to environmental administration of the Tokyo Metropolitan Government (TMG), including research commissioned by the TMG, joint research with Tokyo Metropolitan University, as well as research by utilizing outside funds from the national government and private companies.



▲ Chassis dynamometer for large-sized vehicles

(1) Studies on the comprehensive efforts for automobile environmental measures

R&S such as testing emission gas reduction effects from vehicles which satisfy the latest emission regulations and from low pollution vehicles, as well as CO2 emission reduction measures by promoting eco-driving and hybrid vehicles, etc., are conducted.

(2) Studies on resource management in the process of municipal solid waste (MSW) disposal, and management methods of hazardous substance in MSW

Evaluation on recyclability to recycle metals included in MSW, and studies on technologies to control hazardous substances in exhaust gas from incineration plants and conducted.



▲ Adsorption / reaction processing experiment apparatus in gaseous mercury



▲ Particulate matter (PM2.5) collecting device and analysis

(3) Studies on the effective promotion of the measures against particulate matter, etc.

The Research Institute focuses on: (1) concentration measurement and composition analysis of particulate matters smaller than 2.5 μm in diameter (PM2.5), which are considered to have a particularly higher adverse impact on human health among those PMs floating in the air; (2) estimating to what extent particulate matters contribute as a pollution source; (3) prediction of effects of the measures; and (4) understanding of the actual condition of smaller particles, i.e. nanoparticles.

(4) Studies on analysis of hazardous chemical substances and status in the environment

The Research Institute conducts R&S on persistent organic pollutants, which is scarcely degradable in the environment and toxic thus a risk to human health is anticipated even with an infinitesimal amount, to grasp the actual state of contamination and identify the sources of those contaminants.



▲ Analysis of hazardous chemical substances

(5) Studies on water environment preservation

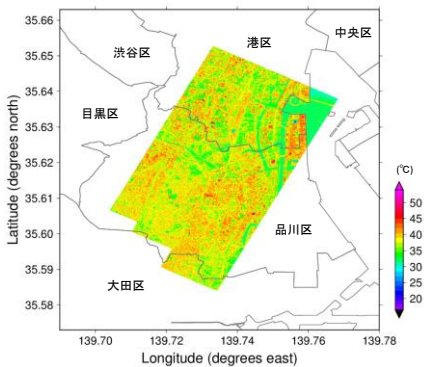
In order to contribute to the improvement of water quality in the long-term and wide-area Tokyo Bay, the Research Institute tries to elucidate the mechanism of red tide and low-level poor oxygen water lump generation in summer, and to conduct research on effective measures. In addition, R&S to grasp the actual condition of groundwater in Tokyo is conducted.



▲ Seawater sampling survey

measures, and provide Tokyo Metropolitan Government and Tokyo residents with scientific knowledge.

- ④ “Ensure technical reliability for implementation of environmental policies”
- ⑤ “Technical support to the municipal personnel”



▲ Measurement result of ground surface temperature by aircraft

(6) Studies on urban heat island phenomenon

The situation and effects of the heat island phenomena in Tokyo, and the improvement of the urban heat environment, such as heat island mitigation and adjustment effect mainly depending upon greenery, are also in the scope of observation and research through numerical simulation.

(7) Survey on urban development utilizing hydrogen battery

Hydrogen is one of the promising next generation energies. Toward utilizing hydrogen energy in urban development, we conduct a survey on the use of CO₂-free hydrogen in Tokyo produced by renewable energy, and hydrogen energy management.

Technical support

The following are key issues;

(1) Automobile emission gas tests, (2) Management of analysis accuracy, (3) Technical support for technical training of TMG/ward/city personnel in charge

(1) Automobile emission gas test

Automobile emission gasses are tested as follows using automobile emission gas measurement equipment (chassis dynamometer, etc.).

- Automobile emission gas test based upon the Automobile Nox PM Control law targeting diesel vehicles such as ordinary-sized trucks and large buses.
- Performance tests of automobile emission gas reduction device for large and small motor vehicles.



▲ Chassis dynamometer for a small-sized motor vehicle



▲ Analysis of administrative specimens

(2) Analysis accuracy management on specimens to be conducted on the part of the government

To monitor the water quality from public water areas and to measure water quality of business entities' effluents according to water quality regulations, the analysis of which is currently commissioned to a private operator by the Bureau of Environment of TMG, the TMRIEP analyzes the same specimens as those used by a private sector's research operator to check whether they achieve the required accuracy in commission analysis.

(3) Technical support to the TMG's and municipal personnel

To implement the environmental administration, the training courses are designed to teach environment-related knowledge and technology, relating to the measurement of dioxins, offensive odors as well as analysis of waste composition.



▲ Training workshop for technical support



▲ Introduction of research to overseas researchers

(4) Technical support for international environmental cooperation

The Research Institute supports to promote international environmental cooperation of TMG by sharing highly specialized technologies, and interacting with foreign cities in the areas of air quality improvement and climate change.



Guide

- **Vehicle emission gas test and performance test for vehicle emission reduction device, etc.**

TMRIEP conducts the vehicle emission gas test and performance tests for vehicle emission reduction device, etc.
Tel 03-3699-1331

- **Library:**

Reference materials related to environment are available.

[Hours] Weekday: 9:00 - 16:30

[Closed] Saturdays, Sundays, national holidays, the year-end and New Year Holidays, and the fourth Wednesday of every month (the third Wednesday, for March and December)

Tel 03-3699-1346 (Reference service) E-mail: refer@tokyokankyo.jp

- **Facility tour: (Advance booking is needed)**

[Hours] 10:00 - 16:00 (excluding 12:00 - 13:00 / Saturdays, Sundays, national holidays and the year-end and New Year Holidays)

Standard tour is about two hours, however, it is adjustable upon consultation.

Tel 03-3699-1333 Public Relations E-mail: kanken@tokyokankyo.jp

- **Public Open Day**

The facility is open to the public during the event of "Open Day". Researchers will guide the visitors explaining on Tokyo's environmental situations and research accomplishments. (See our website for schedule)

- **Public research conference**

Public research conference for research accomplishments is held in December or January every year. (See our website for the details)

History

1968 April	The Tokyo Metropolitan Research Institute for Environmental Pollution was established (Yurakucho, Chiyoda ward, Tokyo).
1985 April	The name was changed from the Tokyo Metropolitan Research Institute for Environmental Pollution to the Tokyo Metropolitan Research Institute for Environmental Protection. The Research Institute in Yurakucho moved to the newly-built facilities at the current location in Koto ward.
2000 April	Integrated as a comprehensive research institute for environmental science including waste management, being combined with the former Tokyo Metropolitan Research Institute for Waste Management.
2007 April	The institute was placed under the authority of the Tokyo Environment Public Service Corporation, an incorporated foundation.
2012 April	The Incorporated Foundation Tokyo Environment Public Service Corporation was reorganized into the Public Interest Incorporated Foundation Tokyo Environment Public Service Cooperation.

In September 2016, the Research Institute was selected as a special Grants-in-Aid research institute regarding national Grants-in-Aid for Scientific Research by the Minister of Education, Culture, Sports, Science and Technology.



Turn at a traffic light "Dai-ku kidotai mae"

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