



PROFILE OF RADIONUCLIDE PARTICULATE MONITORING IN INDONESIA

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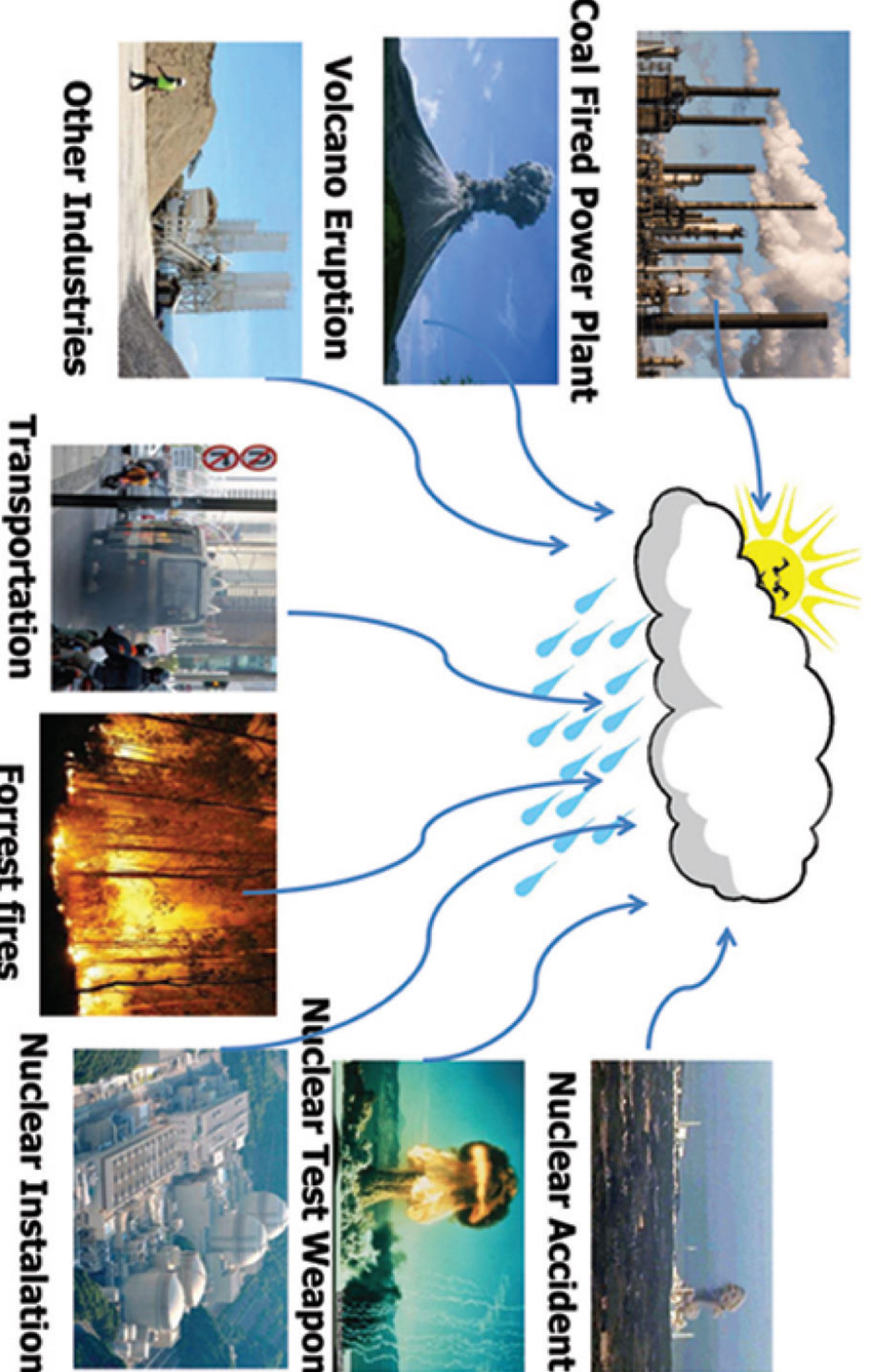
Natural radionuclides essentially a lot of in the environment and along with the use of nuclear technology in various fields would increase the concentration of radionuclides in nature that can causing environmental contamination and it is necessary for monitoring radionuclides in the environment. radionuclides particulate monitoring in Indonesia is aimed determining the ambient concentrations of radionuclides and monitoring of radioactive substances in case of contamination from outside Indonesia such as the impact of Fukushima accident or nuclear experiments from other countries. In Indonesia has installed radionuclides stations in Jakarta 25 Km from G.A Siwabessy Research Nuclear Reactor. Radionuclide particulate stations is complemented by Snow White JL-900 High volume sampler, Ultra Low background HPGe detector with 60% efficiency from ORTEC that follow the standards CTBTO and sampling was conducted two times a week for 24 hours of measurement. for monitoring particulate air radioactivity in other areas such as Bali, pekanbaru and Bogor used SIBATA High volume sampler. the results obtained some radionuclides such as Pb-210, Be-7, Ra-226, Th-232, Cs-137, K-40 with various concentrations.

Introduction

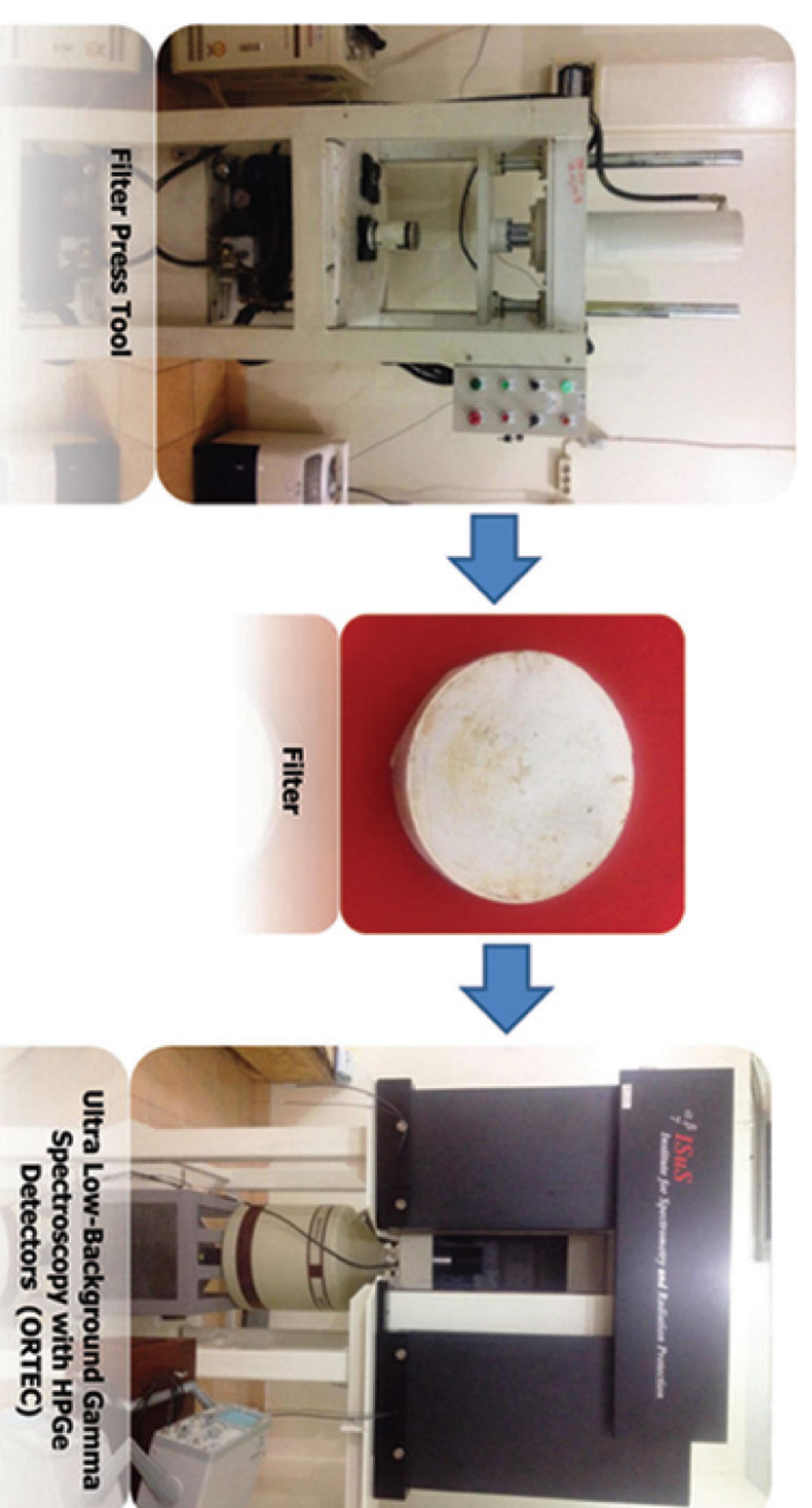
Indonesia a country that is very strategic because it passed the equator and located between two continents (Asia and Australia) and located between two oceans (Indian and Pacific Oceans) so it is possible the transfer of radionuclides from long range transport source (fallout occurring on a nuclear accidents or of nuclear weapons testing or leakage of nuclear reactors. Besides that the spread of various industries such as industrial cashiers power plants, transportation and various activities in Indonesia. This makes Indonesia contribute as a pollutant. Therefore, monitoring of radionuclides in Indonesia needs to be done.



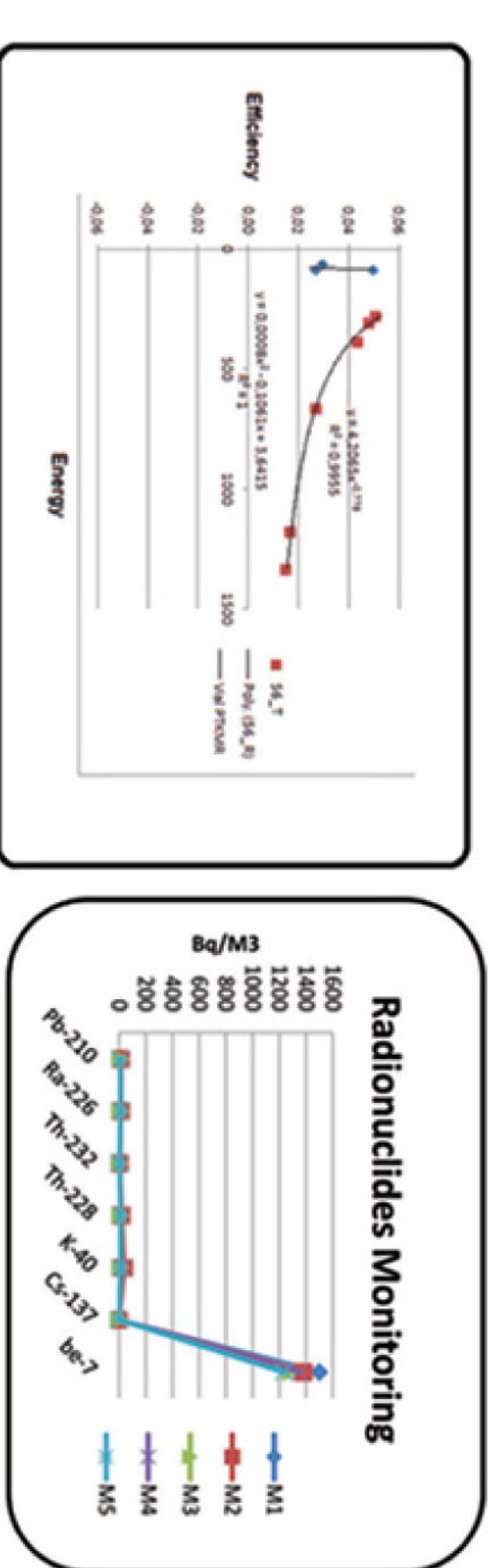
sources of radioactive contaminants into the environment



Radionuclides Particulate analysis with Ultra Low Background Gamma Spectroscopy



Radionuclides Particulate analysis with Ultra Low Background Gamma Spectroscopy (III)



Radionuclides used throughout this report are microequivalents (left): $1 \text{ Bq} = 1$ nuclear transformation per second. The uncertainties reported are standard deviations of the mean values multiplied by a coverage factor ($k = 2$, providing a level of confidence of 95%.

Atmospheric radioactivity
No significant concentrations of artificial radionuclides were detected by gamma-spectroscopic analysis of air filters collected.

Aim :

- determining the ambient concentrations of radionuclides and monitoring of radioactive
- long range transport radioactive source (fall out)
- Characterization and ecosystem estimation

Facilities Location

Indonesia has installed some radionuclides stations, one of them is in the Metrology Center Safety and radiation technology at Jakarta, besides that Indonesia is appointed by the CTBTO-BATAN as a noble gas station SAUNA which this year placed in Manado

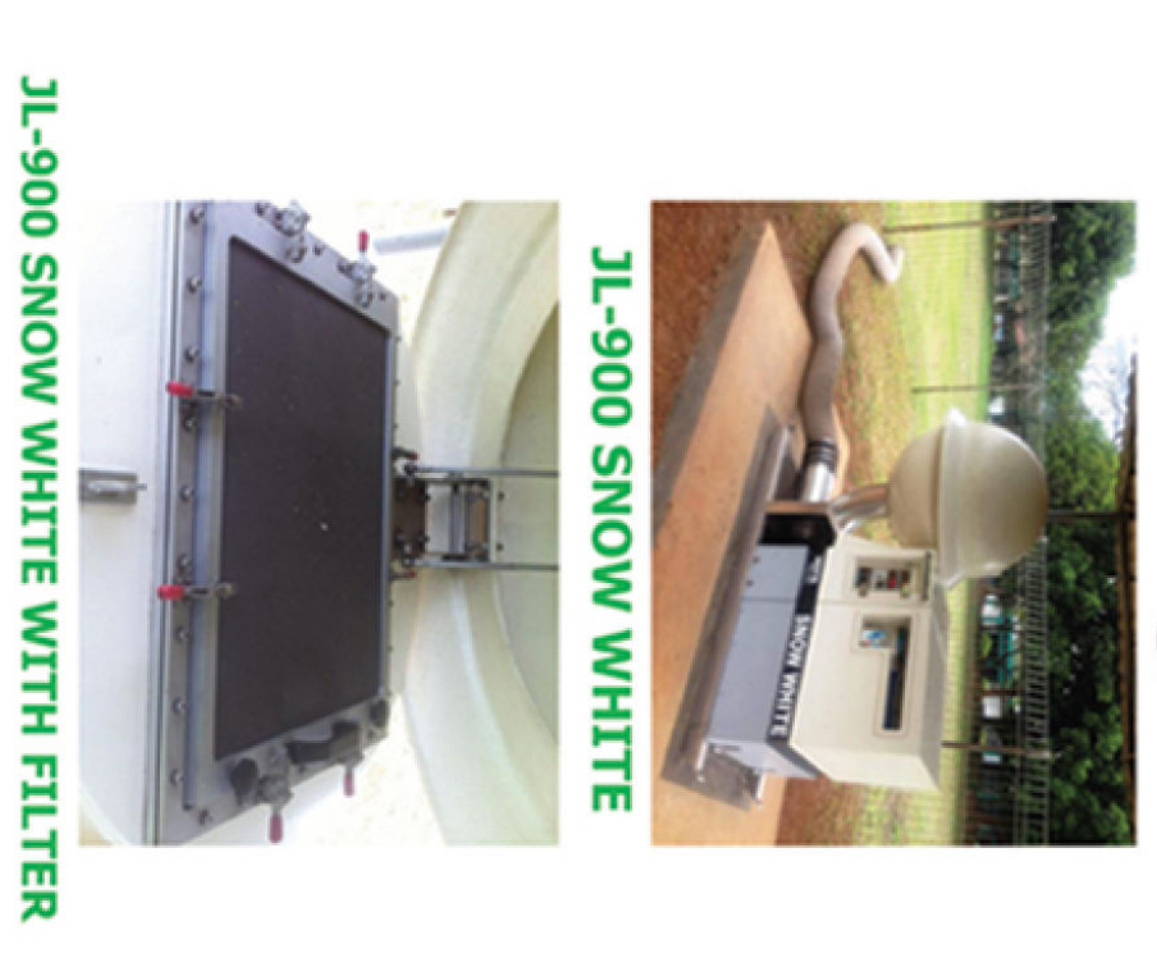
Radioxenon Monitoring

- Radioxenon Monitoring (Transportable Laboratory)
- CTBTO – BATAN
- Placed in Manado

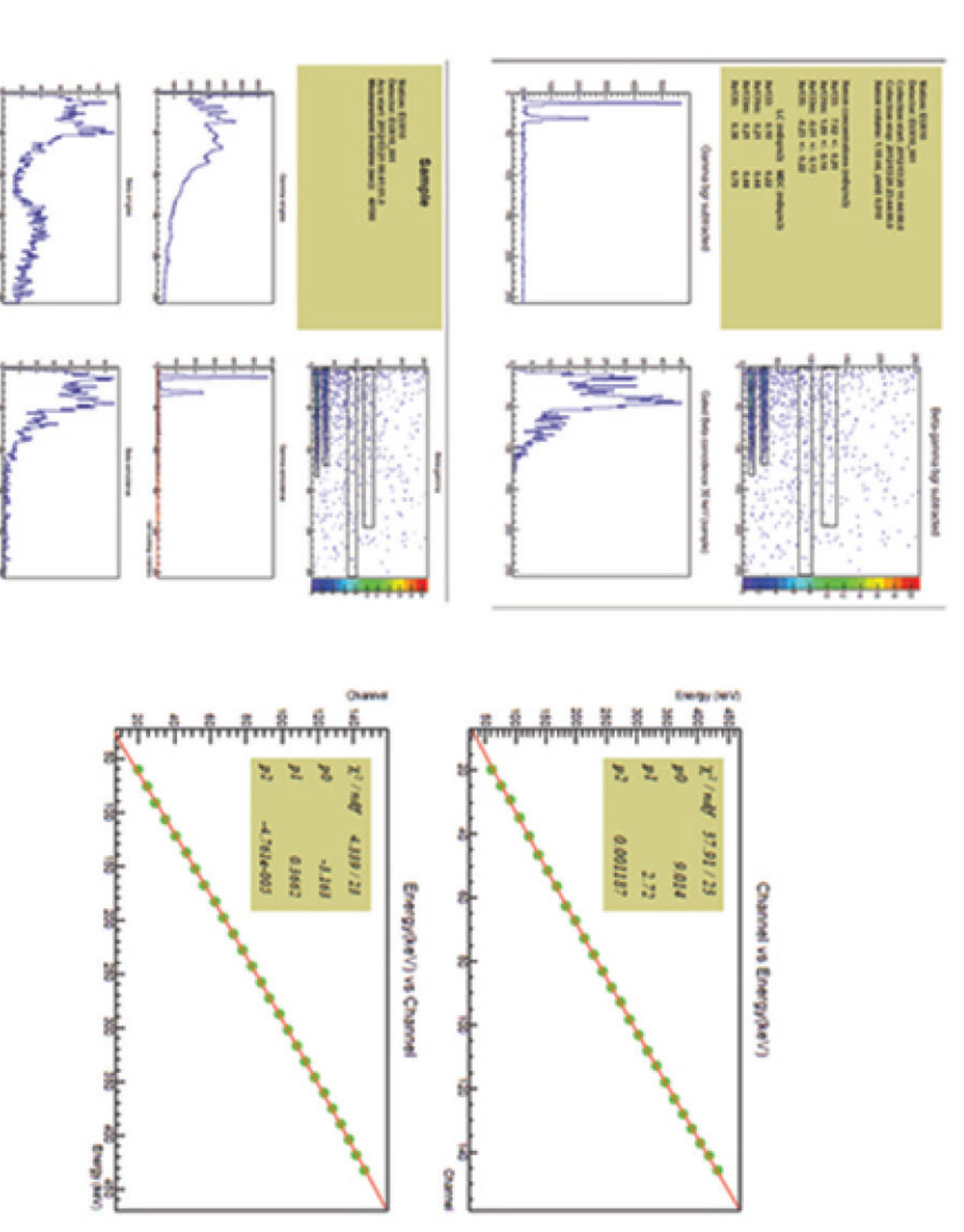


Radionuclides Monitoring

- Equipment**
- High volume air sampler JL-900 SNOW WHITE
- Ultra Low Level Background Counting System (Basement Laboratory)
- sample pressing / compactor Low-Background Gamma Spectroscopy with HPGe Detectors (ORTEC)
- Ultra Low Level Background Shielding



Radioxenon Analysis with xecon tools



CONCLUSION

Indonesia has conducted monitoring of radionuclides by using snow white high volume sampler with HPGE detector ultra low background in Jakarta and monitoring radioxenon conducted by CTBTO cooperation with BATAN operate SAUNA TXL II in Manado. No significant concentrations of artificial radionuclides were detected by gamma-spectroscopy analysis of air filters collected

ADVICE

Additional measuring device such as SAUNA and Metrology device for Jakarta, in order to complete the radionuclide monitoring data in Indonesia Inter-Comparison with radionuclides laboratories in other countries under the coordination from CTBTO