Research Activity Plan in 2025-27

Research subjects	Bgd	Chn	Ind	Kaz	Jpn	Mys	Mng	Phl	Tha	Vnm
New, Agricultural Bio-stimulant 1. Degraded Chitosan for Animal Feed 4. Synergistic Effect among PGP, SWA and BF 5. PGP and SWA, inclusive Process development 6. Mutation Breeding of Microbe using radiation		✓		✓	✓	✓	✓		✓	✓
New, Environmental Remediation 3. Environmental Remediation 8. Recycle plastic	✓	✓	✓	✓				✓	✓	✓
New, Medical and Biological Application 2. Hydrogel for Medical Application 7. Sterilization and sanitization using radiation	✓	✓	✓		✓	✓	✓	✓		

Research Plan

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Agricultural Bio-stimulant	**Malaysia and Thailand** • Broaden Application Range *other feedstock (cow and tilapia) • Conduct Field Trials and guideline development • Scalability Assessment **Malaysia** • Research Initiative & field trials through collaboration with the agriculture NGO/researcher • Data collection & Guideline Development. • Run Pilot Projects. • Compatibility Studies. **Thailand** Initiate a study to analyze the effects of SWA on plants and soil **China, Japan, Malaysia, Mongolia, Vietnam** • Improved products (SWA, PGP, Biofertilizer) • Metagenomic, meta-transcriptomic, and metabolomic study for efficiency and correlation study. • Search for the suitable carrier for different type of biofertilizer (a consortium of bacteria, fungi, etc.), • Optimization of the production on the large scale • Promotion and application of PGP, SWA and Biofertilizer **China, Malaysia, Vietnam** • Develop standard protocol for radiation mutagenesis • Cooperation of irradiation facilities • Field trial of the potential mutants **Kazakhstan** • Study of a mixture of gel-forming fire extinguishing powder based on SWA for extinguishing class A fires.

Research Plan

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Environmental Remediation	**Vietnam** • Study on the treatment of hospital wastewater treatment using electron beam method. • Study on the increase of mechanical properties of plastic waste (mesh waste) using irradiation for recycle purposes at pilot scale. **China** • Degradation behavior of new drugs, microplastics, metal complex et al. will continue to be studied. The key laboratory of the Ministry of education of comprehensive treatment of complex pollutants works well and the application of National key laboratory of nuclear industry effluent is submitted. • Enhance market share of rubber tires, EB degradation of microplastics will be combined with biological treatments. **Kazakhstan** • An application has been submitted for grant financing for the commercialization of the results of scientific and technical activities. The amount of attracted investments is about 1 million US dollars. **Indonesia** • Working on TRL 5 and conduct more experiments to reduce the irradiation dose for compatibilizer production **The Philippines** • Continuing TRL 4 studies closely with private recycling company • Characterization for understanding mechanism

Research Plan

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Medical and Biological Application	**Indonesia and Malaysia** • Market study – need to be conducted extensively so that the funding agency will know the marketability of the product • Biofertilizer carrier sterilization **Japan** • Hydrogels for regenerative medicine, and drug discovery • Nanoparticles and microfluidics for diagnostics **Philippines** • CMC Hemostat: Involve collaborators in the clinical and technology transfer • CMHA Hydrogel: Continue R&D activities; Submitted proposal for funding and awaiting approval • Collaborate with medical device manufacturers to promote radiation sterilization. • Collaborate with FNCA members with x-ray irradiation facilities. **Mongolia** • Post-harvest treatment of basic vegetables with irradiation to reduce losses during preservation. • Meat treatment to improve hygiene and sanitation. • Promote and educate farmers and small businesses, provide nuclear technological information to the public as a safe.