Results of Applications for 2019 Sustainability Science Research Projects at Academia Sinica

There is a total of six applications for the 2019 Sustainability Science Projects (three from the Area of Mechanisms and Preventions of Air Pollution; three from the Area of Foundational and Critical Problems in Energy Applications). The applications have requested a budget of NT$ 91,296,000 in total for the first year. Two out of the six applications were approved in the meetings of the Second-round Review and Budget Review. Two applications were tentatively approved for the first year funding based on the meetings' conclusion. The total approved budget amount is NT$ 44,000,000. Please refer to the following table for detailed information. Approved projects may not be executed until the budget plans are passed by legislation.

A. Mechanisms and Preventions of Air Pollution: (2 project)

Project No.	Title of Projects	(1) Principal Director (2) Subproject PI (3) Co-PI	Institutions
AS-SS-108-01	Emissions of Reactive Nitrogen Species due to Fertilization and Its Impacts to Air Quality	(1) Charles C.-K. Chou (3) Pao-Kuan Wang (3) Horng-yuh Guo	RCEC, *Academia Sinica* RCEC, *Academia Sinica* TARI, *Council of Agriculture, Executive Yuan*
AS-SS-108-01-1	Flux of reactive N-Species from N-Fertilized Soil to the Atmosphere	(2) Chia-Wei Lee (3) Yo-Jin Shiau (3) Yi-Ying Chen	National Kaohsiung University of Science and Technology RCEC, *Academia Sinica*
AS-SS-108-01-2	Production and Transport of Ozone and Nitrate Aerosols over N-Fertilized Areas	(2) Charles C.-K. Chou (3) Chih-Chung Chang	RCEC, *Academia Sinica*
AS-SS-108-01-3	Impact assessment of Fertilization Management to Air Quality	(2) Chuan-Yao Lin	RCEC, *Academia Sinica*
AS-SS-108-03	From Public Health to Forestry: Probing into Urban PM Pathogenesis and Alleviation Strategies	(1) Jing-Jong Shyue	RCAS, *Academia Sinica*
AS-SS-108-03-1	Effects of Urban Forest on Particulate Matter (PM) Air Pollution Reduction	(2) Su-Ting Cheng	School of Forestry and Resource Conservation, *NTU*
AS-SS-108-03-2	Urban PM2.5 Chronic Exposure-induced Pulmonary Inflammation and Carcinogenesis in Mice Model	(2) Huei-Wen Chen	Graduate Institute of Toxicology , *NTUCM*
AS-SS-108-03-3	Development of Field-Deployable Lung Chip Box (LUNCH BOX) to Study Effects of Urban	(2) Yi-Chung Tung	RCAS, *Academia Sinica*

	PM2.5 on Respiratory System *in vitro*		
AS-SS-108-03-4	Imaging Mass Spectroscopy Analysis for Particulate Matter (PM) and Biological Samples in Urban Air Pollution	(2) Jing-Jong Shyue	RCAS, *Academia Sinica*

B. Foundational and Critical Problems in Energy Applications: (2 project)

Project No.	Title of Projects	(1) Principal Director (2) Subproject PI (3) Co-PI	Institutions
AS-SS-108-02	High Efficiency Solar Fuels: From Materials Development to Device Integration	(1) Yu-Tai Tao	IoC, *Academia Sinica*
AS-SS-108-02-1	Optimization of Heterostructured Photoelectrochemical Hybrid Materials toward Total Water Splitting	(2) Ming-Hsi Chiang (3) Chun-Hong Kuo	IoC, *Academia Sinica*
AS-SS-108-02-2	Light-harvesting Antenna and Solar Cell Units	(2) Jiann T'suen Lin (3) Shih-Sheng Sun	IoC, *Academia Sinica*
AS-SS-108-02-3	Electrode Materials Development and Interfacial Engineering for High Efficiency Solar Fuel Generation	(2) Yu-Tai Tao (3) Kuang-Lieh Lu	IoC, *Academia Sinica*
AS-SS-108-02-4	Highly Efficient Hydrogen Evolution from Water Splitting Using Photovoltaic-driven Electrochemical Cells and Photoelectrochemical Cells	(2) Wen-Feng Liaw (3) Chen-Hsiung Hung	Department of Chemistry, *NTHU* IoC, *Academia Sinica*
AS-SS-108-04	Green and Sustainable Full Spectrum Solar System	(1) Chih-Wei Chu	RCAS, *Academia Sinica*
AS-SS-108-04-1	Advanced solar cell and Perovskite solar cell subsystem	(2) Chih-Wei Chu	RCAS, *Academia Sinica*
AS-SS-108-04-2	Diffractive planar spectrum-splitting module applied as a full-spectrum concentrator	(2) An-Chi Wei	Graduate Institute of Energy Engineering, *NCU*
AS-SS-108-04-3	Photo-thermal-electro-chemical integrated management system	(2) Hsieh-Cheng Han	RCAS, *Academia Sinica*