

Results of Applications for the 2009 Integrated Thematic Projects at Academia Sinica Announced

There is a total of 24 applications for the 2009 Thematic Projects (11 from Division of Mathematics and Physical Sciences; 13 from Division of Life Sciences; 0 from Division of Humanities and Social Sciences). The applications require a budget of NT\$246,795,000 in total (NT\$147,733,000 for Division of Mathematics and Physical Sciences; NT\$99,062,000 for Division of Life Sciences).

Of all the applications, 11 were approved in the meetings of the Second-round Review and Budget Review, including 6 from Division of Mathematics and Physical Sciences, and 5 from Division of Life Sciences. The total approved budget amounts to NT\$80,745,000 (NT\$47,785,000 for Division of Mathematics and Physical Sciences; NT\$32,960,000 for Division of Life Sciences). Please refer to the following table for detailed information.

A. Division of Mathematics and Physical Sciences : (6 projects)

Project No.	Title of Projects	Principal Investigators	Institutions
AS-98-TP-A02	A novel ultrasonic technique for diagnosis of breast cancer	Chien-Cheng Chang	Research Center for Applied Sciences, Academia Sinica
	2-1 Ultrasound scatterer concentration imaging	Chien-Cheng Chang Chih-Kuang Yeh	Research Center for Applied Sciences, Academia Sinica Department of Biomedical Engineering and Environmental Sciences, NTHU
	2-2 Adaptive data analysis on ultrasound signals	Norden Eh Huang Chien-Chung Chang	Research Center for Adaptive Data Analysis, National Central University
	2-3 Clinical trials and validation of methods	King-Jen Chang Chiung-Nien Chen	Department of Surgery, Taiwan University Hospital
AS-98-TP-A03	High spin polarization materials with good spin injection properties for Spintronics	Shang-Fan Lee Jueinai Raynien Kwo Guang-Yu Guo	Institute of Physics, Academia Sinica Department of Physics, National Tsing Hua Department of Physics, National Taiwan University

	3-1 Preparation and Characterization of Spintronic Materials and Devices	Yun-Liang Soo Mingwei Hong	Department of Physics, National Tsing Hua University Department of Materials Science and Engineering, National Tsing Hua University
	3-2 Magnetic, electric properties, and high frequency response measurements	Shang-Fan Lee Yung Liou	Institute of Physics, Academia Sinica
AS-98-TP-A04	BMVC related molecules in G-quadruplexes and in cancer research	Ta-Chau Chang	Institute of Atomic and Molecular Sciences, Academia Sinica
	4-1 Design, synthesis, characterization and application of BMVC related molecules in G-quadruplexes and in cancer research	Ta-Chau Chang	Institute of Atomic and Molecular Sciences, Academia Sinica
	4-2 Analyzing the molecular mechanism of carbazole derivatives on tumorigenesis and their application in anti-tumor therapy	Jing-Jer Lin	Institute of Biopharmaceutical Science, National Yang-Ming University
	4-3 Molecular modeling and single molecule TPM approach to the interaction of the BMVC and its derivatives with human telomere	Dah-Yen Yang Hung-Wen Li	Institute of Atomic and Molecular Sciences, Academia sinica Department of Chemistry, National Taiwan University
AS-98-TP-A05	Photoelectrochemical Water Splitting for Hydrogen Production	Kuei-Hsien Chen	Institute of Atomic and Molecular Sciences, Academia Sinica
	5-1 Electrochemical Properties Measurement for Nitrides and Oxides Semiconductors	Surojit Chattopadhyay	Institute of Biophotonics, National Yang-Ming University
	5-2 III-Nitride Material Synthesis for Photoelectrochemistry	Li-Chyong Chen	CCMS, National Taiwan University
	5-3 Characterization and Analysis of Nitride and Oxide Semiconductors for Solar Water-splitting	Jih-Shang Hwang	Institute of Optoelectronic Sciences, National Taiwan Ocean University
	5-4 Pt/Ru Containing Sulfide Based Photocatalyst for Water Splitting	Liu Ru-Shi	Department of Chemistry, National Taiwan University

AS-98-TP-A07	Exploring Radiology Information in the Phase, Temporal and Spectral Domains with Nanoscale Resolution	Yeukuang Hwu	Institute of Physics, Academia Sinica
	7-1 Development of nanoscale x-ray microscopy with phase contrast and x-ray fluorescence spectroscopy	Yeukuang Hwu	Institute of Physics, Academia Sinica
	7-2 Nanofabrication of very high aspect ratio nanostructures as x-ray optical devices	Fan-Gan Tseng	Department of Engineering and System Science, National Tsing Hua University
	7-3 Nanoparticle uptake by biological systems	Chung-Shi Yang	Department of Applied Chemistry National Chi-Nan University
AS-98-TP-A10	Advancing toward subfemtosecond and attosecond science and technology	Andy Kung	Institute of Atomic and Molecular Sciences, Academia Sinica
	10-1 Generation of sub-single-cycle attosecond pulses with controllable constant envelope phase	Andy Kung	Institute of Atomic and Molecular Sciences, Academia Sinica
	10-2 Development of ultra-broadband spatial light modulators	Ci-Ling Pan Ru-Pin Pan	Dept. of Photonics, NCTU Dept. of Electrophysics, NCTU
	10-3 Arbitrary waveform attosecond pulse measurement	Chao-Kuei Lee	Institute of Electro-Optical Engineering, National Sun-Yat-Sen University

B. Division of Life Sciences : (5 projects)

Project No.	Title of Projects	Principal Investigators	Institutions
AS-98-TP-B01	Marine biodiversity census at a global biodiversity hotspot (Philippines)- fishes and crustaceans	Kwang-Tsao Shao	Research Center for Biodiversity, Academia Sinica
	1-1 Marine fishes of Philippines waters: A biodiversity census and comparison with fish community structure of Taiwan	Kwang-Tsao Shao	Research Center for Biodiversity, Academia Sinica

	1-2 Cryptic diversity and genetic differentiation of deep-sea barnacles in the Philippine waters	Kwok-Kan Chan	Research Center for Biodiversity, Academia Sinica
	1-3 Tropical marine biodiversity census: Species richness and bathymetric stratification in marine megabenthos of the Philippines shrimps and lobsters	Tin-Yam Chan	Institute of Marine Biology, National Taiwan Ocean University
AS-98-TP-B02	Rice tapetum: structure and function	Yue-ie Hsing	Institute of Plant and Microbial Biology, Academia Sinica
	2-1 Using genomics to study rice anther development	Yue-ie Hsing	Institute of Plant and Microbial Biology, Academia Sinica
	2-2 Control of tapetum on pollen maturation	Anthony Huang	Department of Botany and Plant Sciences, UC Riverside
	2-3 Investigations on the tubular transport system from tapetum to microspore/pollen	Chih-hua Tsou	Institute of Plant and Microbial Biology, Academia Sinica
AS-98-TP-B06	Understanding of limnological dynamics of subtropical subalpine lakes	Chih-Yu Chiu	Research Center for Biodiversity, Academia Sinica
	6-1 Development and Application of Water Quality and Ecosystem Model in Subtropical Sub-alpine Lakes – Yuanyang Lake and Emerald Peak Lake	Wen-Cheng Liu	Department of Civil and Disaster Prevention Engineering, National United University
	6-2 Adaptation of algae to environmental disturbance in subalpine lakes: case study in Yuanyang Lake and Emerald Peak Lake	Jiunn-Tzong Wu	Research Center for Biodiversity, Academia Sinica
	6-3 Comparison studies on metabolism of subtropical sub-alpine lakes: nutrient and irradiance control of photosynthesis, respiration and ecosystem production in lake ecosystem	Chih-Yu Chiu	Research Center for Biodiversity, Academia Sinica
AS-98-TP-B08	A new model of medaka to study salinity adaption mechanisms	Pung-Pung Hwang	Institute of Cellular and Organismic Biology, Academia Sinica
	8-1 Expression, function and regulation of ion transporter isoforms in medaka gill/skin	Pung-Pung Hwang	Institute of Cellular and Organismic Biology, Academia Sinica

	during acclimation to seawater		Sinica
	8-2 Regulation of Na-K-ATPase expression and function in medaka gills upon salinity challenge	Tsung-Han Lee	Department of Life Sciences, National Chung Hsing University
	8-3 Functional analysis of MR cells in medaka during acclimation to seawater	Li-Yih Lin	Department of Life Science, National Taiwan Normal University
AS-98-TP-B09	Investigation of Tumor-Localized Activation of Proactive Molecules for Cancer Imaging and Therapy	Steve Roffler	Institute of Biomedical Sciences, Academia Sinica
	9-1 Proactive Glucuronide Cancer Therapy	Steve Roffler	Institute of Biomedical Sciences, Academia Sinica
	9-2 Molecular imaging of β -glucuronidase activity for personalized prodrug targeted therapy	Tian-Lu Cheng	Department of Biomedical Science and Environmental Biology, Kaohsiung Medical University
	9-3 Design and Synthesis of Proactive Glucuronide Antitumor and Imaging Molecules	Yu-Lin Leu	Department of Pharmacy, Chia Nan University of Pharmacy & Science