Outputs Arising from Dean's Research Fund

Eighth Round

Individual Research Scheme (IRS)	
Project Leader	**Dr Lina Vyas, SSPS**
Project Title *(Ref No.)*	Gender and Work-family Conflict Gaps in Hong Kong: Theory, Relationships, and the Impact of Family-Friendly Policies *(IRS-1)*
Output:	Journal/ book 1. Gender and Work-family Conflict Gaps in Hong Kong: Theory, Relationships, and the Impact of Family-Friendly Policies *(Under Preparation)* Conference 1. International Conference on Management, Economics & Social Science Title: International Conference on Management, Economics & Social Science External Grant 1. GRF Decision to Leave: A Case-control Study of Turnover among Healthcare Professionals in Hong Kong (Date of application: October 2023)
Project Leader	**Prof So Wing Mui Winnie, SES**
Project Title *(Ref No.)*	Knowledge and behavior change with COVID-19 among Hong Kong primary students: An intervention study with animated videos *(IRS-2)*
Output:	Journal/ book 1. Yu Chen, Hoi Man Lee, Wai Chin Li, Mei Sum Man, Winnie Wing Mui So*. Title: Enhancing pupils' understanding of COVID-19 and relevant environmental and social issues through animation video series *(Under Preparation)* Conference 1. The 3rd International Conference on Science and Technology Education STE 2022 Title: Knowledge and behavior with COVID-19 among Hong Kong primary students

Project Leader	**Dr Yeung Chi Ho, SES**
Project Title *(Ref No.)*	Leveraging exploration and exploitation in hard optimization problems via statistical physics *(IRS-3)*
Output:	Journal/ book 1. Li, B., & Yeung, C. H.*, Understanding the stochastic dynamics of sequential decision-making processes: A path-integral analysis of multi-armed bandits. *Chaos: An Interdisciplinary Journal of Nonlinear Science, 33(6). (2023)* External Grant 1. GRF From the Non-ergodicity in Physics to the Non-convexity in Optimization - How do They Manifest Themselves in the Variable Space? (Date of application: November 2022) ***(Date of approval: July 2023, Project Duration: 3 years)***
Project Leader	**Dr Tsang Yiu Fai, SES**
Project Title *(Ref No.)*	A Novel Pyrolytic Biorefinery Approach for Production of Bioplastics Using Plastic Waste, Aquaculture Solid Waste, and Algal Biomass *(IRS-4)*
Output:	Journal/ book 2. KIM, S., YANG, W., LEE, H. S., TSANG, Y. F. & LEE, J., Effectiveness of CO_2-mediated pyrolysis for the treatment of biodegradable plastics: A case study of polybutylene adipate terephthalate/polylactic acid mulch film, Journal of Cleaner Production. 372, 133763. *(2022)* 3. JUNG, S., TSANG, Y. F., KWON, D., CHOI, D., CHEN, W-H., KIM, Y-H., MOON, D. H. & KWON, E. E., CO_2-mediated thermal treatment of disposable plastic food containers, Chemical Engineering Journal. 451, Pt. 1, 138603 *(2022)* 4. JUNG, J-M., CHO, S-H., JUNG, S., LIN, K-Y. A., CHEN, W-H., TSANG, Y. F. & KWON, E. E., Disposal of plastic mulching film through CO_2-assisted catalytic pyrolysis as a strategic means for microplastic mitigation, Journal of Hazardous Materials. 430, 128454. *(2022)* External Grant 2. GRF Bioconversion of Biogas from Anaerobic Digestion of Waste Activated Sludge into Biodegradable Plastics with Desirable Characteristics (Date of application: November 2021)

	Collaboration with other research institutions 1. Identification, Characterisation, and Process Modification for Enhancing Removal Efficiency of Microplastics in Sewage Treatment Works with Different Designs in Hong Kong (PI: Environment and Conservation Fund, HK$1,000,000, 04/2021-date). [Collaborators: HKBU and DSD] 2. Removal Mechanisms of Ultraviolet (UV) Filters/Stabilizers in Bioreactors Coupled with Pretreatment Using Advanced Oxidation Processes (PI: Dean's Research Fund, HK$250,000, 06/2022-date). [Collaborator: National Chung Hsing University, Taiwan]
Project Leader	**Dr Li Wai Chin, SES**
Project Title *(Ref No.)*	Arsenic biomineralization by iron oxidizing strain (Ochrobactrum sp.) and its application in contaminated paddy field remediation *(IRS-5)*
Output:	Journal/ book 1. Kaikai Wu, Chuan Wu , Xingxing Jiang, Rui Xue, Weisong Pan, Wai Chin Li*, Xinghua Luo, Shengguo Xue, Remediation of arsenic contaminated paddy field by a new iron oxidizing strain (Ochrobactrum sp.) and iron-modified biochar, Journal of Environmental Science 115:411-421, https://doi.org/10.10 16/j.jes.2021.08.009 *(2022)* 2. Wenhui An, Chuan Wu*, Shengguo Xue, Ziyu Liu, Min Liu, Wai Chin Li*, Effects of biochar/AQDS on As(III)-adsorbed ferrihydrite reduction andarsenic (As) and iron (Fe) transformation: Abiotic and biological conditions, Chemosphere 294: 133126, https://doi.org/10.1016/j.chemosphere.20 21.133126 *(2022)* 3. Qian ZY, Wu C, Pan WS, Xiong XR, Xia LB, Li WC, Arsenic Transformation in Soil-Rice System Affected by Iron-Oxidizing Strain (Ochrobactrum sp.) and Related Soil Metabolomics Analysis. Front. Microbiol. 13: 794950. doi: 10.3389/fmicb.2022. 794950 *(2022)* External Grant 1. GRF The mechanism of arsenic and antimony mineralization and its application in soil remediation at antimony smelting contaminated site (Date of application: November 2021)
Project Leader	**Dr Leung Chi Fai, SES**
Project Title *(Ref No.)*	Photoluminescent Transition-metal Isocyano and Carbene Complexes as Anticancer Agents *(IRS-6)*

Output:	Journal/ book 1. Chen Pan, Pui-Yu Ho, Hui-Dong Zhong, Chi-Fai Leung,* and Wen-Xiu Ni*, Transformable cis-trans isomerism of Ruthenium (II) complexes with photo-activated anticancer activity *(2023 Under Preparation)* Conference 2021 (Hong Kong) Name: ACS Publication Symposium (Virtual – Hong Kong) Title: Photophysical and Antitumor Properties of Ruthenium (II) Diisocyano Complexes Bearing 2-Benzoxazol-2-ylphenolate External Grant GRF 2023/24 Project Title: Two-photon Excited Photoredox Transformation with Carbon Dioxide and Oxygen (Date of application: November 2022)
Project Leader	**Dr Chan Man Ho, SES**
Project Title *(Ref No.)*	Detecting dark matter signal by radio observations *(IRS-7)*
Output:	Journal/ book 1. Man Ho CHAN, Chak Man LEE, Constraining dark matter-nucleon scattering cross section by the background electron anti-neutrino flux data, Physics Letters B. 825, p. 136887 *(2022)* 2. Man Ho CHAN, Chak Man LEE, Constraining annihilating dark matter by the radio continuum spectrum of the Large Magellanic Cloud, The Astrophysical Journal. 933, 2, 130 *(2022)* Conference Year: 2023 Name: Global Experts meet on Astronomy and Astrophysics Title: Radio constraints of annihilating dark matter External Grant 1. GRF Detecting dark matter signal by radio observations (Date of application: Nov 2021), ***(Date of approval: 30 June 2022, Project Duration: 2 years)***
Project Leader	**Dr Zhang Qiaoping, MIT**
Project Title *(Ref No.)*	Examining Novice and Experienced Mathematics Teachers' Beliefs and Practice during the Pandemic: A Comparative Study between Hong Kong

	and Italy *(IRS-8)*
Output:	Journal/ book 1. Zhang, Q. P.*, Facing change in challenging times: The experiences of Hong Kong mathematics teachers during the COVID-19 pandemic. *In K. W. H. Yung, & H. X. Xu, Educating Teachers Online in Challenging Times: The Case of Hong Kong (52-74). (2023)* 2. Zhang, Q. P.*, Morselli, F., Robotti, E., "I was worried…I felt energized…I was learning": A Study of Hong Kong and Italian Teachers' Beliefs and Practices During the COVID-19 Pandemic/Journal of Mathematics Teacher Education *(2023 Under 2nd Review)* 3. Zhang, Q. P., Chia, H. M., & Morselli. Exploring the Impact of Distance Teaching on Mathematics Educational Values in Hong Kong: A Study of In-Service Teachers' Perspectives. Mathematics Education Research Journal. *(2023 Under 2nd Review)* Conference 1. The 44th Conference of the International Group for the Psychology of Mathematics Education Title: Examining mathematics teachers' professional knowledge base during the pandemic crisis: The perspective of SWOC analysis 2. The 15th International Conference on Technology and Mathematics Education Title: Facing change in challenging times: A reflection on Hong Kong mathematics teachers' teaching experiences during the COVID-19 pandemic External Grant 1. GRF xploring preservice mathematics teachers' noticing from the lens of value and beliefs: A comparative study among Mainland China, Hong Kong and the United States (Date of application: September 2022) Other impact / output -張僑平 (2022)。 新常態下數學教學模式的改變。香港數學教育會議 2021/22，香港。 http://www.hkame.org.hk/new_html/hkmec2021/index.html -張僑平 (2022)。 課程框架、評卷指引、電子工具：專業數學教師需要怎樣的學科知識？。香港數學教育學會研討會 2022，香港。 http://www.hkame.org.hk/event.php?mid=&id=181

Project Leader	**Dr Yang Yang, CCA**
Project Title *(Ref No.)*	Assessing the enactment of school music curriculum: A comparative study of Hong Kong, Mainland China and the United States *(IRS-11)*
Output:	Journal/ book 1. Yang Yang, Assessing alignment between curriculum standards and teachers' instructional practices in China's school music education, Research Studies in Music Education *(2022)* 2. Yang YANG, Graham WELCH, A systematic literature review of Chinese music education studies during 2007 to 2019, International Journal of Music Education *(2022)* 3. Lexuan ZHANG, Bo Wah LEUNG, Yang YANG, From theory to practice: Student-centered pedagogical implementation in primary music demonstration lessons in Guangdong, China, International Journal of Music Education *(2022)* 4. Yang Yang, Challenges in Teachers' Professional Identity Development under the National Teacher Training Program , Music Education Research *(Under Review)* Conference 1. The 13th Asia-Pacific Symposium for Music Education Research Title: Assessing Alignment between Curriculum Standards and Teachers' Instructional Practices in China's School Music Education 2. The 35th World Conference of the International Society for Music Education Title: Finding the position of the school music curriculum in a comprehensive assessment framework for STEAM
Project Leader	**Dr Fu Hong, MIT**
Project Title *(Ref No.)*	Geometric eye modeling and its application in strabismus assessment *(IRS-12)*
Output:	Journal/ book 1. Yang Zheng, Hong Fu*, Ruimin Li, Carly Lam, Jimin Liang, Kaitai Guo, Wai-Lun Lo, "Video-based Intelligent Ocular Misalignment Assessment", IEEE Transactions on Automation Science and Engineering. (2024 *Under Review)*
Project Leader	**Dr Chu Man Ying Amanda, SSC**
Project Title *(Ref No.)*	Longitudinal Item Response Techniques: Theories and Methods *(IRS-13)*
Output:	Journal/ book 2. Tsang, J. T.Y., So, M. K. P., Chong, A. C. Y., Lam. B. S. Y. & Chu, A. M. Y.*, Higher education during the pandemic: The predictive factors

	of learning effectiveness in COVID-19 online learning, Education Sciences, 11(8), 446 (*2021)* 3. So, M. K. P., Tiwari, A. & Chu, A. M. Y.*, Interviewer bias when using multiple mini-interviews in selecting student nurses in a Chinese setting. Submitted to Nurse Education Today. *(2022 Under Review)* External Grant 1. GRF Multivariate randomized response modeling for psychosocial and behavioral surveys with mixed-type sensitive questions (Date of application: October 2021)
Project Leader	**Dr Suen Chun Kit Antony, MIT**
Project Title *(Ref No.)*	Wellposedness on some classes of fluid equations *(IRS-14)*
Output:	Journal/ book 1. Suen, A*, Existence, stability and long time behaviour of weak solution of the three-dimensional compressible Navier-Stokes equations with potential force. *Journal of Differential Equations,* 299, 463-512 *(2021)* 2. Suen, A*, Refined blow-up criteria for the three-dimensional viscous compressible flows with large external potential force and general pressure; *Zeitschrift für Angewandte* Mathematik und Physik, 73 (18) *(2021)* 3. Suen, A*, Some Serrin type blow-up criteria for the three-dimensional viscous *compressible flows with large* external potential force, *Mathematical Methods in the Applied Sciences,* 45 *(4), 2072-2086 (2022)* 4. Suen, A*, Global regularity for the 3D compressible magnetohydrodynamics with general pressure, *Discrete and Continuous Dynamical Systems,* 42 (6), 2927-2943 *(2022)* External Grant 1. GRF Wellposedness and singularity formation of inviscid active scalar equations with even or odd constitutive laws (Date of application: November 2021) ***(Date of approval: July 2022, Project Duration: 36 months)*** ***Project Number: 18300622*** Other impact/output

	1. Research Output Prize for the Dean's Research Fund by EdUHK, 2021/22 2. President's Awards for Outstanding Performance in Research (Early Career Research Excellence Award) by EdUHK 2021/22
Project Leader	**Dr Tan Weiqiang, SSC**
Project Title *(Ref No.)*	Host Country's economic policy uncertainty and bank loan contracting *(IRS-15)*
Output:	Journal/ book 1. Hu, Fang; Tan Weiqiang; Zhang, Jian, Geopolitical Risk Exposure and the Cost of Debt *(Under Review)* 2. Hao SHU, Weiqiang TAN, Does carbon control policy risk affect corporate ESG performance? *Economic Modelling (2023 accepted not yet published)* 3. Dai, Yunhao; Kordsachia, Othar; Tan Weiqiang, Host country's economic policy uncertainty and MNE's bank loan contracting *(Under Preparation)* 4. Bassen, A., Hao, S., Tan, W., Green revenues and stock returns: Cross-market evidence, *Finance Research Letters* 52, 103550 *(2023 accepted not yet published)* 5. Carbon policy risk and corporate capital structure decision. *International Review of Financial Analysis (2023 accepted not yet published)* External Grant 1. GRF The Effect of Terrorist Attack on Corporate Innovation Strategy (Date of application: November 2021) 2. GRF Project Title: Customized Financial Literacy Education Programme in Rural Villages in China: A Randomized Control Trial Total budget requested: HK$667,000 (Date of application: September 2022)

Interdisciplinary Research Scheme (IDS)	
Project Leader	**Dr Au Ka Man, SES**
Project Title *(Ref No.)*	Switching devices based on photochromic metal-organic frameworks *(IDS-1)*
Output:	Journal/ book 1. Xiayu ZHANG, Tao YU*, Ka Man Vonika AU*, Photoresponsive Metal-Organic Frameworks: Tailorable Platforms of Photoswitches for Advanced Functions. ChemNanoMat. 2022, 8, e202100486. *(2022*) Conference 1. Pacifichem 2021 Title: Functional Metal-based Assemblies based on the 2,4,6-Triphenylpyridine Backbone 2. MACRO 2022 Title: Mesoporous Copper(II) Metal-Organic Frameworks for Water Remediation External Grant 1. GRF Project title: Design and synthesis of luminescent MOF-gel composites with hierarchical porosity (Date of application: November 2021)
Project Leader	**Dr Fok Lincoln, SES**
Project Title *(Ref No.)*	Human Exposure to Microplastics through Nonalcoholic Beverage Consumption *(IDS-2)*
Output:	Journal/ book 1. Lam, For & Chow, Human Exposure to Microplastics via the Consumption of Nonalcoholic Beverages in Various Packaging Materials: The Case of Hong Kong *(2023 Under preparation)* 2. Lam, T. W. L., Taui, Y. C. J., Cheng, Y. L., Ma, A. T. H. & Fok, L.*, Microplastic contamination in edible clams from popular recreational clam-digging sites in Hong Kong and implications for human health, v875, 162576. *(2023)*
Project Leader	**Prof Ho Wing Kei, SES**
Project Title *(Ref No.)*	Covalent organic frameworks for highly efficient photocatalytic removal of environmental pollutants *(IDS-3)*
Output:	Journal/ book 3. Zhou, Min; Zeng, Libin; Li, Rong; Yang, Can; Qin, Xing; Ho,

	Wingkei*; Wang, Xinchen*. "Poly (heptazine imide) with enlarged interlayers spacing for efficient photocatalytic no decomposition", Applied Catalysis B: Environmental (2022) 317, 121719. 4. Li, Yuxin; Jiang, Zeyu; Dong, Guohui*; Ho, Wingkei*. "Construction and Activity of an All-Organic Heterojunction Photocatalyst Based on Melem and Pyromellitic Dianhydride" 1 53985. ChemSusChem (2022) 15 (12), e202200477 (The Front Cover). 5. Zhou, Min; Li, Shanrong; Wang, Sibo; Jiang, Zhifeng; Yang, Can; Guo, Fangsong; Wang, Xinchen*; Ho, Wing-kei*. "Anchoring ZnIn2S4 nanosheets on ultrathin boron carbon nitride layers for improved photo-redox catalysis", Applied Surface Science (2022) 599, 153985 External Grant 1. GRF Project title: Design of Single-Atom-Based Photocatalysts with High Atom Utilization and Quantum Efficiency in Multi-Phase Catalytic Removal of Air Pollutants (Date of application: November 2022)
Project Leader	**Prof Chow Cheuk Fai Stephen, SES**
Project Title *(Ref No.)*	Iron-catalyzed Late-Stage Aliphatic C-H Chlorination of drugs and bioactive substrates *(IDS-5)*
Output:	Journal/ book 1. Chang SHEN, Wasihun Menberu DAGNAW, Ching Wai FONG, Kai Chung LAU, Cheuk Fai Stephen CHOW, Selective functionalization of C(sp^3)–H bonds: Catalytic chlorination and bromination by $Iron^{III}$-acacen-halide under ambient condition, Chemical Communications. 58, 76, 10.1039/D2CC02924C (selected as the Front Cover Page) *(2022)* External Grant 1. GRF Project title: Bimetallic Latent Catalysts for Oxidative Halogenation (Date of application: November 2021)
Project Leader	**Dr Cheung Ting On Lewis, SSC**
Project Title *(Ref No.)*	Understanding resident perception on urban river revitalization *(IDS-6)*
Output:	Journal/ book 1. Lee, F., Ma, A.T.H. & Cheung, L.T.O. Linking public's perceptions on rivers and preferences on river restoration benefits to willingness to pay: a structural equation modelling approach *(Under Review)*

Dean's Research Prize – Knowledge Transfer Prize (KTP)	
Project Leader	**Dr Tsang Yiu Fai, SES**
Project Title *(Ref No.)*	Environmental Pollution Control and Management: From "Waste" to " Treatment" (*KTP-2)*
Output:	Other output One Rank A journal article (IF: 7.926), acknowledge the support of Dean's Research Fund: HU, X., WANG, J., JIN, T., LI, Z., TSANG, Y. F. & LIU, B., Efficient H_2O_2 generation and bisphenol a degradation in electro-fenton of O-doped porous biochar cathode derived from spirit-based distiller's grains, Process Safety and Environmental Protection. 166, p. 99-107. Prizes 1. 2022 Organizer's Choice Award, The 7th International Invention Innovation Competition in Canada (iCAN) 2. 2022 Gold Medal, The 7th International Invention Innovation Competition in Canada (iCAN) 3. 2022 Special Award, International Federation of Inventors Associations – Focal Point Middle East (IFIA-FPME)

Dean's Research Prize – Impact Case Study Prize (ICSP)	
Project Leader	**Dr Man Yu Bon, SES** **Prof Wong Ming Hung, SES** **Dr Mo Wing Yin, School of Science and Technology, Hong Kong Metropolitan University**
Project Title *(Ref No.)*	Development of high grade pellets using food wastes for safe and quality fish production *(ICSP-3)*
Output:	Journal 1. YANG, X., MAN, Y. B., WONG, M. H., OWEN, R. B. & CHOW, K. L., 15 Jun 2022, Environmental health impacts of microplastics exposure on structural organization levels in the human body. In: Science of the Total Environment. 825, 154025. 2. HUANG, Z-L., YANG, Z-B., XU, X-X., LEI, Y-J., HE, J-S., YANG, S., WONG, M. H., MAN, Y. B. & CHENG, Z., 15 Dec 2022, Health risk assessment of mercury in Nile tilapia (Oreochromis niloticus) fed housefly maggots. In: Science of the Total Environment. 852, p. 158164 3. MAN, Y. B., ZHANG, F., MO, W. Y., CHOW, K. L. & WONG, M. H., 15 Nov 2022, Using food waste to cultivate safe, good-quality Sabah (giant hybrid) grouper: Dioxins and dioxin-like polychlorinated biphenyls. In: Environmental Pollution. 313, 120122. 4. GAO, M., YANG, Z-B., XU, X-X., XIAN, J-R., YANG, Y-X., YANG, S., MAN, Y. B. & CHENG, Z., 19 Jan 2023, (E-pub ahead of print), Using fly larvae to convert food waste for growing Oujiang color common carps: Health risk assessment of polycyclic aromatic hydrocarbons. In: Environmental Science and Pollution Research.