

# Research Projects and Grants

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## EXTERNAL GRANTS

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- **Research and Commercialization of Core Computer Vision Algorithms in the Process of Lithium Battery Manufacturing**  
*Period:* 06/05/2022 – 06/05/2024  
*Funding Agency:* FDCT/AGJ  
*Role:* Principal Investigator
- **Model Development of Reconstructed Iris Feature Fusion Method Based on Improved BEMD**  
*Period:* 04/08/2022 – 04/03/2023  
*Funding Agency:* FDCT/AMR  
*Role:* Co-Principal Investigator
- **An Intelligent Diagnostic System for Automatic Segmentation and Survival Prediction of Nasopharyngeal Carcinoma Multimodal MRI Images**  
*Period:* 01/04/2019 – 31/03/2023  
*Funding Agency:* GSTIC  
*Role:* Co-Principal Investigator
- **Application of Self-Defence Medical Techniques for Prevention and Early Treatment of Dementia in the Elderly Population**  
*Period:* 05/01/2020 – 05/01/2022  
*Funding Agency:* FDCT/ASC  
*Role:* Member
- **Quaternions Method and Digital Color Image Processing**  
*Period:* 07/01/2019 – 07/01/2022  
*Funding Agency:* FDCT  
*Role:* Principal Investigator
- **Quaternion Linear Canonical Transforms and Applications**  
*Period:* 22/07/2016 – 21/07/2019  
*Funding Agency:* FDCT  
*Role:* Principal Investigator
- **Matsaev's Theorem for Subharmonic Functions in Half Spaces**  
*Period:* 01/01/2016 – 31/12/2018  
*Funding Agency:* NSFC  
*Role:* Co-Principal Investigator
- **The Related Topics About Spheroidal Wave Functions in Quaternion Analysis**  
*Period:* 01/01/2015 – 31/12/2017  
*Funding Agency:* NSFC  
*Role:* Principal Investigator

- **Generalized Spheroidal Wave Functions and Applications in Quaternion Analysis**  
*Period:* 03/10/2013 – 02/10/2016  
*Funding Agency:* FDCT  
*Role:* Principal Investigator
- **Clifford Analysis and Applications**  
*Period:* 05/10/2012 – 04/10/2014  
*Funding Agency:* FDCT  
*Role:* Principal Investigator
- **Research on Some Problems in High-Dimensional Space Under the Framework of Clifford's Algebraic Structure**  
*Period:* 01/01/2010 – 01/12/2013  
*Funding Agency:* NSFC  
*Role:* Co-Principal Investigator

## INTERNAL GRANTS (PRINCIPAL INVESTIGATOR)

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- **MYRG2015-00058-FST: The Application of Quaternions to Some Signal Problems**  
*Period:* 16/07/2015 – 15/07/2018  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator
- **MRG012/KKI/2014/FST: Generalized Spheroidal Wave Functions and Applications in Quaternion Analysis**  
*Period:* 13/03/2014 – 12/03/2017  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator
- **MYRG099(Y1-L2)-FST13-KKI: Fourier Analysis and Applications**  
*Period:* May 2013 – June 2016  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator
- **MRG002/KKI/2013/FST: Clifford Analysis and Applications**  
*Period:* January 2013 – December 2014  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator
- **MYRG142(Y3-L2)-FST11-KKI: Time-Frequency Analysis and Applications**  
*Period:* June 2011 – April 2015  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator
- **RG076/09-10S/11R/KKI/FST: Applied Complex and Harmonic Analysis in Euclidean Space**  
*Period:* January 2010 – December 2011  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator
- **RG070/06-07S/09T/KKI/FST: Hardy Spaces of Monogenic Functions & Applications**  
*Period:* January 2007 – June 2009  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Principal Investigator

## INTERNAL GRANTS (CO-PRINCIPAL INVESTIGATOR)

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- **RG059/05-06S/QT/FST: Paley-Wiener and Shannon Sampling Theorems in Hypercomplex Analysis**  
*Period:* January 2005 – December 2006  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Co-Principal Investigator
- **RG091/04-05S/C117: Clifford Analysis Methods in Harmonic Analysis**  
*Period:* January 2003 – December 2005  
*Funding Agency:* Research Committee, University of Macau  
*Role:* Co-Principal Investigator

- **RG055/01-02S/QT/FST: (a) Monogenic Sinc Function and Applications; (b) Harmonic Analysis on the Unit Spheres in Higher Dimensional Euclidean Space**

*Period:* January 2002 – December 2002

*Funding Agency:* Research Committee, University of Macau

*Role:* Co-Principal Investigator

- **RG024/00-01S/QT/FST: Higher Dimensional Sinc Methods and Applications in Partial Differential Equations**

*Period:* January 2000 – December 2001

*Funding Agency:* Research Committee, University of Macau

*Role:* Co-Principal Investigator

## GRANTS SUMMARY

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Category	Count
External Grants (as PI)	7
External Grants (as Co-PI)	4
Internal Grants (as PI)	7
Internal Grants (as Co-PI)	4
<b>Total Grants</b>	<b>22</b>

Last updated: March 18, 2026