

Unit Name

Applied Cryptography Unit

Collaborations

Partisia, Denmark, industry-academia collaboration on privacy-preserving technologies

Scholarly Contributions and Creative Productions (by Faculty)

Conference Proceedings

1. Garms, Lydia, Taofiq Paraiso, Neil Hanley, Ayesha Khalid, Ciara Rafferty, Andrew Shields, Carlos Cid, and Maire O'Neill. 2024. "Experimental Demonstration of a Hybrid Authenticated Key Exchange Integrating QKD and PQC in a Single Protocol." In Quantum 2.0, QUANTUM 2024 in Quantum 2.0 Conference and Exhibition.
2. Gupta, Shashank, Carlos Cid, and William John Munro. 2024. "Threshold Quantum Distillation." In Quantum Communications and Quantum Imaging XXII 2024.

Journal Article

1. Garms, Lydia, Taofiq K. Paraiso, Neil Hanley, Ayesha Khalid, Ciara Rafferty, James Grant, James Newman, Andrew J. Shields, Carlos Cid, and Maire O'Neill. 2024. "Experimental Integration of Quantum Key Distribution and Post-Quantum Cryptography in a Hybrid Quantum-Safe Cryptosystem." Advanced Quantum Technologies 7 (April):2300304.

Presentation at Conference

1. Cid, Carlos F. "Cyber Security and Quantum Technologies: Friends or Foes?" 4th Nordic Quantum Life Science Roundtable, September 2024.

Seminars

1. Cid, Carlos F. "Quantum Cyber Security", University of Bergen AI seminar series, January 2025.
2. Cid, Carlos F. "Cryptography in a Post-Quantum World", OIST-SIP "Security in Quantum Era" event, April 2025.
3. Cid, Carlos F. "Quantum Cyber Security (or There Is No Crypto Solace in the Quantum World)", Finanstilsynet - The Financial Supervisory Authority of Norway, September 2024.
4. Cid, Carlos F. "Quantum Cyber Security", Simula Seminar: Emerging topics in cyber security, September 2024.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Shashank Gupta	Journal Article	Device-independent quantum secure direct communication under non-Markovian quantum channels	Quantum Information Processing	Springer US	
Shashank Gupta	Journal Article	ChaQra: a cellular unit of the Indian quantum network	Scientific Reports	Scientific Reports	2024

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Shashank Gupta	Poster Presentation at Conference	Threshold quantum distillation	Quantum Innovation 2024		
Shashank Gupta	Poster Presentation at Conference	Threshold quantum distillation	SPIE Conference on Optics + Photonics		

Honors, Awards & Fellowships

Sep 2022 - Ongoing Community Fellow, 2022, International Cyber Security Center of Excellence (INCS-CoE)

External Service

2024-06-27 PhD thesis examiner, Sorbonne Université, member of PhD examining committee (Augustin Bariant)

2025-04-17 program committee member, QSHC 25 - Workshop on Quantum-Safe Hybrid Cryptography (Munich, Jul 2025)

2025-03-01 - Ongoing program committee co-chair, IWSEC 2025 - 20th International Workshop on Security (Fukuoka, Nov 2025)

2024-12-01 - Ongoing standardisation committee member (expert) - CEN/CLC JTC 22 Quantum technologies, CEN/CELENEC, committee of the European standardisation bodies CEN/CLC for Quantum Technologies.

2024-11-01 - Ongoing standardisation committee member (expert) - SN/K 617 Quantum technologies, Standard Norge, special committee of the Norwegian standard body for Quantum Technologies.

2024-04-23 programme committee member, IWSEC 2024 - 19th International Workshop on Security (Kyoto, Sep 2024)

2024-04-01 - Ongoing guest editor, Special Issue on Code-based Cryptography, Design, Codes and Cryptography journal (Springer)

2023-05-01 program committee member, FSE 2024 / ToSC 2023/2024

Other Institutional Service

2024-05-09 - Ongoing Information Security Committee, (University)