



Postdoc position in **quantum sensing and transduction with Rydberg atoms**  
**PRE-ANNOUNCEMENT**  
in the **Centre for Quantum Optical Technologies and University of Warsaw**

Project	NCN SONATA project “Bridging microwave and optical domains with nonlinear quantum optics enabled by Rydberg atoms” <a href="https://www.qodl.eu/sonata-bridging/">https://www.qodl.eu/sonata-bridging/</a>
Lab	Quantum Optical Devices Lab at CeNT UW <a href="https://www.qodl.eu/">https://www.qodl.eu/</a> <a href="https://qot.cent.uw.edu.pl/">https://qot.cent.uw.edu.pl/</a> <a href="https://cent.uw.edu.pl/">https://cent.uw.edu.pl/</a>
Duration	approx. 11 months starting from July 2025 until June 2026, extension possible with different projects
Remuneration	approx. 10.000 PLN gross-gross, negotiation possible
PI	Michał Parniak <a href="mailto:m.parniak@cent.uw.edu.pl">m.parniak@cent.uw.edu.pl</a> <a href="https://www.qodl.eu/michal-parniak/">https://www.qodl.eu/michal-parniak/</a> <a href="https://scholar.google.pl/citations?user=15TPqUsAAAAJ&amp;hl=en&amp;authuser=1">https://scholar.google.pl/citations?user=15TPqUsAAAAJ&amp;hl=en&amp;authuser=1</a>
Postdoc tasks	We envisage that depending on candidate qualification, they may undertake different tasks, for example: <ol style="list-style-type: none"><li>1) Experimental Physics: experimental implementation of sensitive Rydberg sensors with hot vapors</li><li>2) Experimental Physics: Study of cold Rydberg atoms sensors in the quantum regime</li><li>3) Electronics: Development of microwave or terahertz sources for use with Rydberg-atom sensors</li><li>4) Theoretical physics: development of theory models for quantum sensors based on Rydberg atoms</li></ol>
Formal requirements	<ul style="list-style-type: none"><li>- no more than 7 years after PhD</li><li>- if your PhD is from University of Warsaw, you must have had at least 10 months of external stay after PhD</li><li>- we are unable to offer any reasonable support in relocation or visa processes</li></ul>
Literature	<ol style="list-style-type: none"><li>1. <a href="https://www.nature.com/articles/s41566-023-01295-w">https://www.nature.com/articles/s41566-023-01295-w</a></li><li>2. <a href="https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.22.034067">https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.22.034067</a></li><li>3. <a href="https://arxiv.org/abs/2412.07632">https://arxiv.org/abs/2412.07632</a></li><li>4. <a href="https://quantum-journal.org/papers/q-2024-08-02-1431/">https://quantum-journal.org/papers/q-2024-08-02-1431/</a></li></ol>

