

TOPTICA BEC Awards 2023

Honoring Excellence in Degenerate Quantum Gases Research

Graefelfing | September 19th, 2023

The TOPTICA BEC Awards 2023 go to Prof. Monika Aidelsburger, Prof. Tilman Pfau, Prof. Wilhelm Zwerger, and Prof. Alexander Fetter. The award ceremony took place during this year's Bose-Einstein Condensation (BEC) conference in Sant Feliu de Guixols (Spain), a biennial international conference on quantum gases and related fields. This premier scientific forum allows participants to share their latest developments and discuss future projects. The winners of the TOPTICA BEC Awards are selected every two years by an independent scientific committee. Nominations may be made by any member of the international scientific community.

The TOPTICA Senior and Junior BEC Awards honor outstanding research in experimental and/or theoretical physics of quantum degenerate atomic gases. The Senior Award recognizes a specific work that is firmly established and has significantly advanced the field of quantum degenerate gases. The Junior Award recognizes outstanding work by a young scientist for research early in her or his academic career. The TOPTICA BEC Award for Lifetime Achievements, established in 2021, recognizes longstanding important contributions to the field. Each prize consists of a cash award and a certificate citing the contributions of the recipients. The awards are presented at the biannual BEC conference and are sponsored by TOPTICA Photonics AG.

About TOPTICA

TOPTICA has been developing, producing, and marketing high-end lasers and laser systems for science, research, and industry for 25 years. The portfolio includes diode lasers, ultrafast fiber lasers, terahertz systems, and optical frequency combs.

Worldwide, TOPTICA has 490 employees in six business units with a consolidated group revenue of €130 million.

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Award ceremony (from left to right):

Dr. Jürgen Stuhler (Laudator, TOPTICA), Prof. Monika Aidelsburger (LMU Munich), Prof. Tilman Pfau (University of Stuttgart), Prof. Wilhelm Zwerger (TU Munich), Prof. Alexander Fetter (Stanford University), and Prof. Päivi Törmä (Chair of Award Committee, Aalto University)

Dr. Jürgen Stuhler, Vice President Quantum Technologies at TOPTICA, presented the awards on September 12, 2023: "TOPTICA is honored to sponsor these prestigious awards in a field of research that has evolved alongside our company for more than a quarter of a century and in which I have worked myself for many years during my academic career. On behalf of the entire TOPTICA team, we congratulate the winners for their outstanding experimental contributions and deep theoretical understanding of BEC-related phenomena. Our relationship with the laureates has been enriched by years of friendship and collaboration".

TOPTICA BEC Junior Award 2023

The Junior BEC Award is awarded to Prof. **Monika Aidelsburger** (Ludwig-Maximilians-Universität Munich) for her seminal contributions to experimental research on synthetic gauge fields and topological physics with ultracold gases.

TOPTICA BEC Senior Award 2023

The Senior BEC Award goes to Prof. **Tilman Pfau** (University of Stuttgart) for his pioneering experiments on long-range interacting quantum gases of dipolar atoms and Rydberg excitations.

TOPTICA BEC Lifetime Award 2023

The Lifetime Award is awarded to Prof. **Alexander Fetter** (Stanford University) and Prof. **Wilhelm Zwerger** (Technical University Munich) for their individual foundational theory works on quantum many-body physics and superfluidity of ultracold gases.

Award Committee Members 2023

Elected by the Scientific Committee of the BEC conference:

Päivi Törmä (Chair), Tilman Esslinger, Rudolf Grimm, Jason Ho, William Phillips, Klaus Sengstock, Martin Zwierlein.

Past Recipients:

BEC Lifetime Award 2021: Tin-Lun (Jason) Ho

BEC Senior Award 2021: Tilman Esslinger and Rudolf Grimm

BEC Junior Award 2021: Martin Zwierlein

BEC Senior Award 2019: Lev Pitaevskii and Sandro Stringari

BEC Junior Award 2019: Francesca Ferlino

BEC Senior Award 2017: Jean Dalibard

BEC Junior Award 2017: Cheng Chin

BEC Senior Award 2015: Tom Greytak, Harald Hess, Daniel Kleppner

BEC Junior Award 2015: Shina Tan

BEC Senior Award 2013: Immanuel Bloch

BEC Junior Award 2013: Markus Greiner

BEC Senior Award 2011: Gora Shlyapnikov

BEC Junior Award 2011: Ian Spielman