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Quantum Degenerate Atomic Mixtures

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Message from the Guest Editor

In the last few decades ultracold quantum gases have established themselves as ideal platforms to study a plethora of interesting phenomena. The mixture of two or more components produces much richer and more intriguing scenarios than the simple multiplication of single constituents, especially when there is a non-negligible mutual interaction between them. Many different quantum mixtures have been realized in the laboratory.

This Special Issue of *Applied Sciences* will highlight recent advances in the ultracold quantum gases community regarding the physics of quantum mixtures. The Special Issue will collect theoretical and experimental works dedicated to the study of problems emerging in the different contexts of quantum mixtures, including out-of-equilibrium dynamics and transport phenomena, collective and topological excitations, phase separation, impurities and polarons, quantum droplets, superfluidity across the BCS–BEC crossover, spin superfluidity and supercurrents, strongly interacting systems, and exotic quantum phases.

Keywords: quantum gases and mixtures; impurities and polarons; hybrid quantum systems; dipolar quantum mixtures; quantum droplets; etc.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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