

Ultracold chemistry and asymptotic physics with diatomic strontium molecules

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Simple molecules at ultracold temperatures, combined with high-resolution optical spectroscopy tools, open the door to molecular and fundamental science that is difficult to access with other physical systems. Here we discuss the studies of ultracold chemistry enabled by photodissociation of diatomic strontium molecules, including the phenomena of resonant and nonresonant barrier tunneling, matter wave interference of reaction products, and forbidden reaction pathways. The weakly bound molecules reveal the peculiar physics of the asymptotic atom-molecule regime and enable new types of precision measurements.

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