HELIUM NANODROPLET ISOLATION SPECTROSCOPY USING AN EXTERNAL CAVITY QUANTUM CASCADE LASER

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A mode-hop free tunable external cavity quantum cascade laser (Daylight Solutions) is used to probe the vibrational dynamics of helium solvated H_2O and NO_2 monomers and dimers. The demonstrated high output power and mode-hop free tuning of the laser in combination with a multipass cell and bolometric detection allow for high resolution spectroscopy studies of helium solvated molecules between 10 and 5 μm.