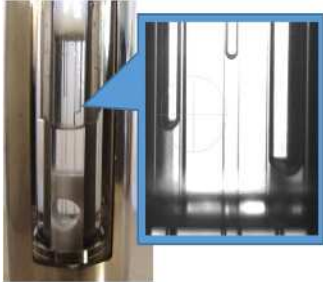
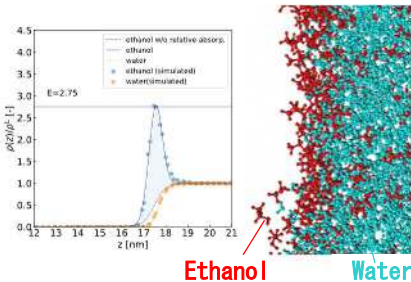
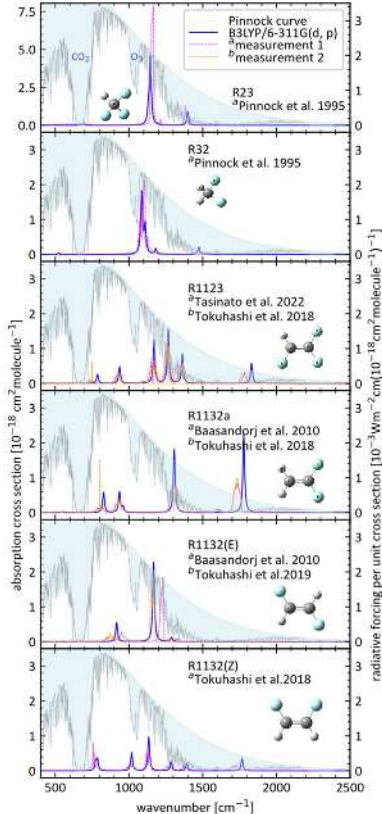
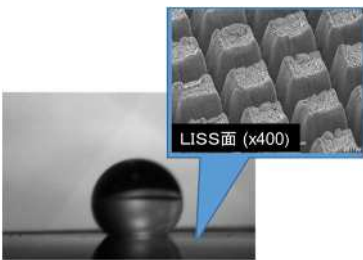


Name KONDOU Chieko	Job Title Professor	Area of Expertise Thermal Engineering, Refrigeration
1. Main Research Topics (1) Thermophysical property measurement and energy analysis for new low global warming potential refrigerants (2) A new fabrication technique of boiling surface in passive cooling devices removing denser heat flux from semiconductors   (Upper left) Surface tension measurement device. The measurement results for low-GWP refrigerants have been adopted by the REFPROP database of the US NIST and are disseminated worldwide. (Upper right) Mixture state near the vapor-liquid interface of water-ethanol system. In a mixture system, the concentration varies drastically at the interface. We reproduce this using molecular simulation to perform more accurate surface tension prediction. (Right) Absorption cross section (infrared absorption capacity) of candidate refrigerants. Quantum chemical calculations are performed to obtain the atmospheric lifetime and global warming potential of various substances. The products generated during the decomposition process are also examined.   (Left) By using a laser to process metal surfaces such as aluminum to a depth of several to tens of microns, it is possible to change the wettability of various liquids. By utilizing this, it is possible to significantly improve boiling heat transfer performance, enabling the design of compact, high-performance coolers.		
2. Keywords global warming potential, refrigerants, heat pump, heat exchangers, cooling		
3. Remarks and Websites The data obtained from our laboratory are posted at the following URL. Please take a look at the students' hard work. researchmap: https://nagasakiuniv-mech.org/ Laboratory: https://researchmap.jp/kondou_chieko		