Dr. Yui Sasaki focuses on the realization of supramolecular sensors by molecular self-assembly, which is inspired by *Mother Nature* toward the establishment of "*artificial sensing platforms that surpass biological recognition systems*".

In a mammalian olfactory system, a small number of receptors can simultaneously detect thousands of odorant molecules owing to their cross-reactivity, achieving discrimination of flavors based on pattern recognition. Inspired by the biological sensing system, she has focused on molecular self-assemblies for chemosensor arrays that allow multi-analyte detection with pattern recognition techniques. Indeed, the fabricated colorimetric or fluorescent self-assembled chemosensor arrays with a small number of building blocks have succeeded in the discrimination of cations, anions, and electroneutral species toward diagnosis, environmental assessment, and food analysis.

In contrast to the conventional sensor arrays comprising various chemosensors, "*pattern recognition without array*" would be the sophisticated sensing approach as "*the simpler we are, the more complete we become*". Thus, she applied the concept to accurate chiral pattern recognition, which is one of the challenging issues in the field of supramolecular chemistry.

As further applications toward on-site analysis, she attempted to develop paper-based chemosensor array devices and successfully detected various types of analytes in real samples such as a soft drink, a commercially available herbicide, a food sample, and human sweat. Judging from the high accuracy and applicability of the proposed sensor devices to real-sample analysis, she believes that the sensor design to maximize the power of self-assembled structures based on the fusion science of host-guest chemistry and analytical chemistry will take us to the next stage to realize supramolecular analytical sensor devices achieving "*artificial sensing platforms beyond biological recognition systems*".