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水溶液中におけるナノ材料の迅速構造解析

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Rapid structural analysis of nanomaterials in aqueous solutions

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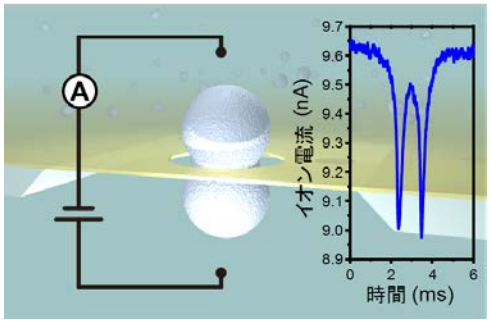

Figure 1. A schematic illustration of nanopore measurements and a example of acquired data

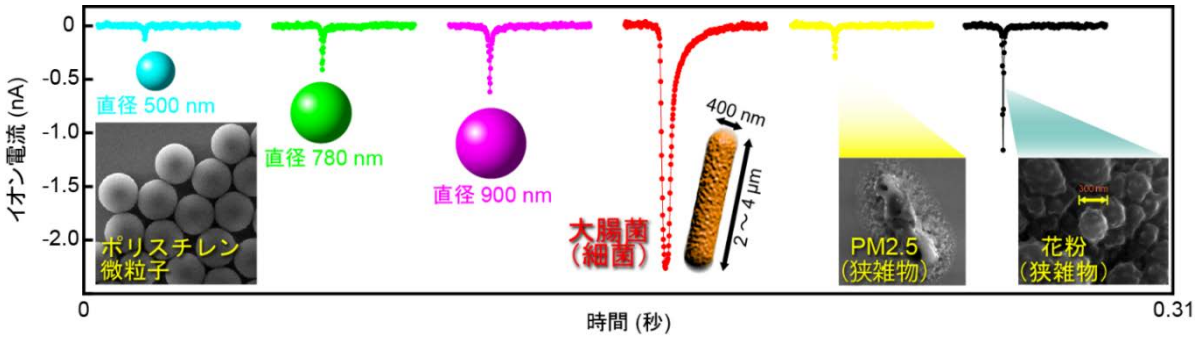

Figure 2. Discrimination and structural analysis of various artificial and biological particles using a low-aspect-ratio pore

水溶液中のマイクロ・ナノサイズの微小検体を、非標識かつ一粒子分解能で検出可能なマイクロ・ナノポアデバイスは、迅速かつ簡便な微生物検査機器や環境監視デバイスへの展開が期待されている。本研究ではポア径に対してポア厚さの小さな低アスペクトポアを用いて、高速・高空間分解能での水溶液中一粒子形状計測の実証に成功した。Micro/nanopore devices enable us to detect micro/nano particles in aqueous solution without labeling at a single particle resolution and are expected to be developed as a rapid and readily measurement system for microbiological test and environmental monitoring.