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Investigating Heterogeneous Microenvironments in Hydrogels by Single Quantum Dot Tracking CHEOL HEE LEE, TODD EMRICK, ALFRED CROSBY, RYAN HAYWARD — Single particle tracking provides a powerful means to locally characterize physical properties within heterogeneous media. We have employed CdSe/ZnS core/shell quantum dots (QDs) as probes to characterize the heterogeneous microstructures within covalently- crosslinked polyacrylamide (PAAm) hydrogels. For appropriate gel compositions, the QDs show periods of caged motion within trapping sites, interspersed by nearly free diffusion. We analyze the trajectories of single QDs using a variety of statistical approaches to elucidate the distribution of trapping site strengths within gels of different average pore size.

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