The past decade has seen an unprecedented growth in our ability to use and control quantum states of a whole variety of different mesoscopic and macroscopic elements. It is now possible to assert individual quantum control over physical quantities such as electron/nuclear spins, microwave/optical photons, and even phonons. Yet, most achievements were reached on systems which show quantum behavior under idealized conditions, significantly restricting their application. It is therefore now time for a concerted effort to design and build universally robust quantum systems and materials in order to develop robust quantum devices and to use those for sensing, particularly in the field of biomedical analytics and imaging.