Abstract
Fluorescence imaging is indispensable in biological research, due to its high sensibility and selectivity, simple operation and in vivo workability. By opening the access to seeing unlimited number of subcellular structures in virtually all living systems, it enable us to monitor almost all kinds of biological phenomena in living cells and organisms on site and in time. However, the traditional fluorophores suffer from the aggregation caused emission quenching effect, which may limit their applications in imaging. We’ve recently discovered a completely different phenomenon on a species of propeller-shaped molecules, which show no emission when molecularly dissolved but are induced to emit strong light upon aggregate formation. We coined the term aggregation-induced emission for this phenomenon. Systematic studies revealed restriction of the intramolecular rotation as the main cause for the phenomenon. The AIE effect is of both scientific value and practical implications and has been applied to different areas.
In this work, we commit ourselves to tuning the emission of AIE chromophores through structural modification, developing new AIE materials and investigating their applications in biological imaging such as cell and bacteria, establishing new methods for biological research.

ALL ARE WELCOME