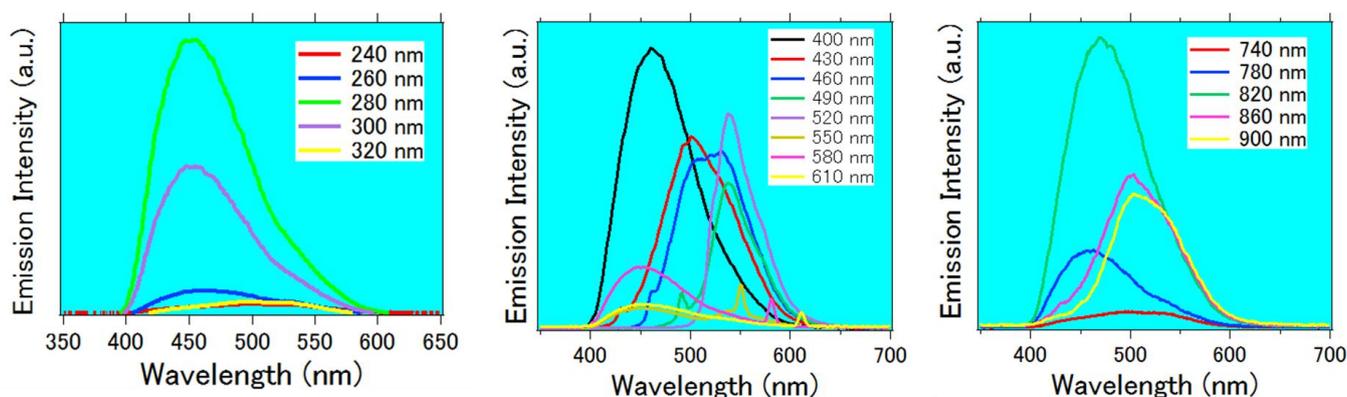


Graphene Quantum Dots

Graphene Quantum dots has the potential to be able to be applied for next generation electronics, energy applications. Graphene itself do not possess band gap energy and its usage is limited. However, when size becomes so small as quantum dots, they exhibit the fluorescent light from ultra violet, visible light range, to near infrared light region. The size of graphene quantum dots ranges approximately 1 – 4 nm. Due to their quantum confinement effect, they can be applied to photovoltaic devices such as solar cell, bio imaging (cancer cell imaging, protein analysis, cell tracking), various type of sensors etc... There have been many reports presenting the synthesis method of graphene quantum dots such as electron lithography (expensive method), synthesize method using strong acid chemical etc... although demands are to be able to synthesize in large quantity. In this regard, we have succeeded in establishing the facile synthesizing method for graphene quantum dots. Quantum efficiency is over 80 % at this stage. We will keep improving the quantum efficiency. This graphene quantum dots is water base. We are under development to prepare organic solvent base one. Please consult with us anything including technical detail.



wavelength number in the figure indicates the excitation wavelength