

## The Queen of QLEDs

Written by Roger Douglas  
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The architect behind development of the Cd-free quantum dot technology, **Dr. Eunjoo Jang** at the Samsung Advanced Institute of Technology (SAIT) was just appointed a Samsung Fellow--an honor also referred to as “**Samsung’s Nobel Prize**”.

One of the breakthrough achievements of Samsung researchers has been the development of **cadmium-free quantum dot technology**, used currently in Samsung QLED TVs.

While quantum dot had the benefit of delivering superior light expression, the technology posed harm to the environment with toxic cadmium at risk of being released through nanoparticle degradation. Samsung’s quantum dots, however, are cadmium-free, and Samsung is currently the only company that produces cadmium-free (Cd-free) quantum dot displays.

Dr. Jang has been involved in the research of Cd-free quantum dot technology for over 15 years.

She explains, “It has been three years since Cd-free quantum dot technology has been applied

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to Samsung products. The technology has proven to be stable even when we change its structures in terms of higher brightness, local dimming, 8K and other features.”

Dr. Jang on the differences between QLED and OLED: “Both have strengths and weaknesses. Contemporary OLED is incomplete, and OLED TV displays have many weaknesses related to burn-in, brightness, large screen and grey-scale which are all due to lesser stability.”

Dr. Jang is currently devoting considerable research into self-lighting QLED and its application, “I am currently participating in a study of making a better display that can overcome the limit of OLED TV and be applied in many other fields. Self-lighting quantum dot technology is being specifically researched for this purpose...”

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