



Ph.D. Course in Materials Science and Nanotechnology

University of Milano-Bicocca, Department of Materials Science, via Cozzi 55, 20125 Milano

April 17, 2018 – 10.30 a.m. Building U9- room 13

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Light Emitting Diode made of InGaN/GaN Nanocolumn Arrays

We found that a regularly arranged InGaN/GaN nanocolumn array can be fabricated by RF-plasma-assisted Molecular Beam Epitaxy using Ti-mask selective-area growth (i.e. Ti-nanohole-patterned GaN templates on sapphire substrate). Dislocation density is minimized in nanocolumn with diameters below 250 nm. Green light emitting diodes made of InGaN/GaN nanocolumn arrays show a high photoluminescence efficiency which means good crystallinity of the arrays.



Short CV

Prof. Katsumi Kishino received the B.E., M.E., and Ph.D. degrees in physical electronics, electronics and electrical engineering from Tokyo Institute of Technology in 1975, 1977, and 1980, respectively. In 1980, he joined Tokyo Institute of Technology as an Assistant Professor and, in 1984, he joined Sohia University where he became Full Professor in 1992. He published more than 300 scientific papers which received more than 4600 total citations. He achieved the emission color control for densely packed InGaN-based nanocolumns

and he demonstrated the independent drive of multicolor (RGBY) micro-LED array. He was named Fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 2016 for contributions to III-V light emitter technology.