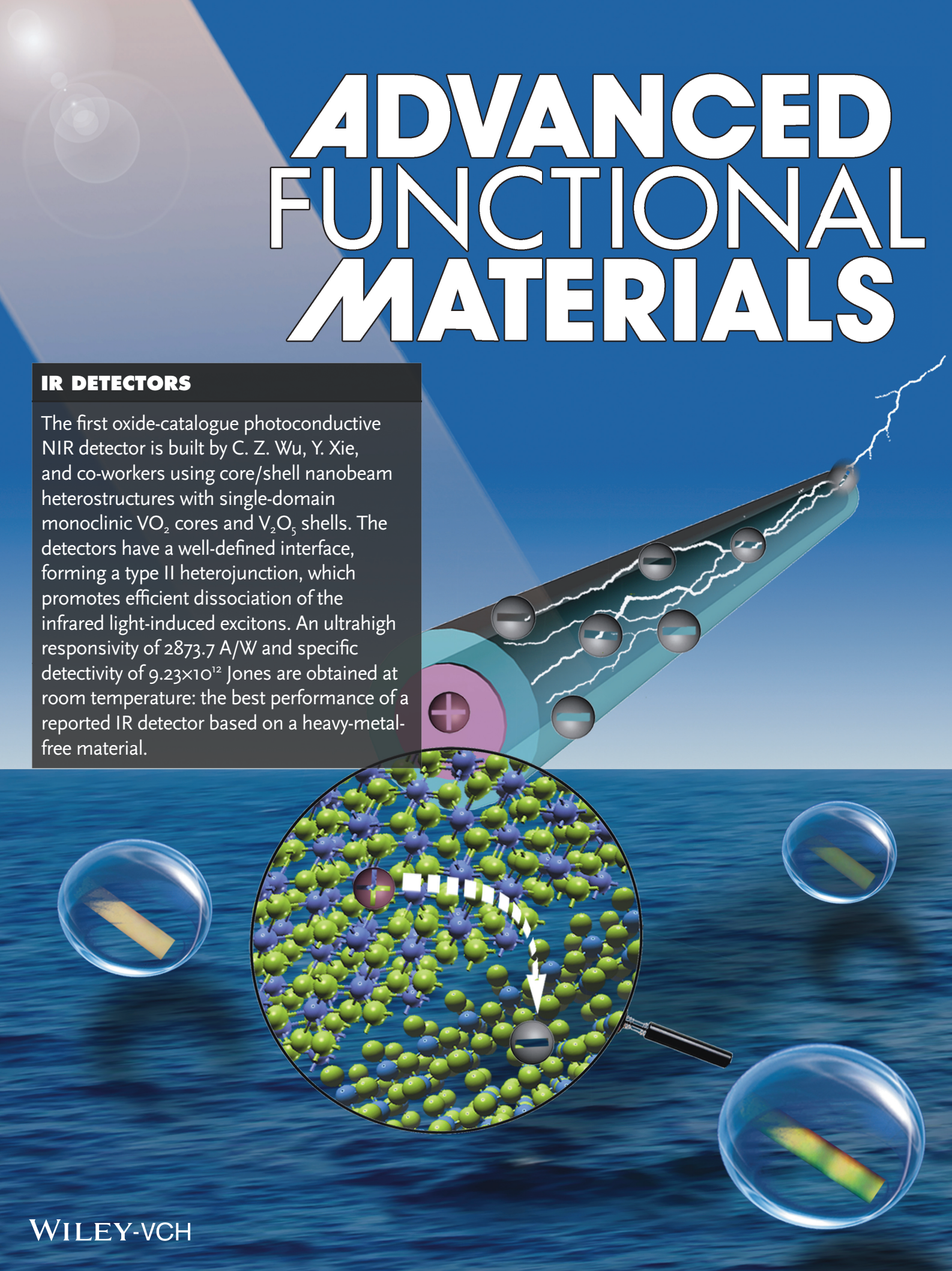
# ADVANCED FUNCTIONAL MATERIALS



## IR DETECTORS

The first oxide-catalogue photoconductive NIR detector is built by C. Z. Wu, Y. Xie, and co-workers using core/shell nanobeam heterostructures with single-domain monoclinic $VO_2$ cores and $V_2O_5$ shells. The detectors have a well-defined interface, forming a type II heterojunction, which promotes efficient dissociation of the infrared light-induced excitons. An ultrahigh responsivity of 2873.7 A/W and specific detectivity of $9.23\times10^{12}$ Jones are obtained at room temperature: the best performance of a reported IR detector based on a heavy-metal-free material.

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