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**AlN nanowire growth using InN crystalline powders by physical vapor deposition** NAOTO KENMOCHI, HIRAKU OTA, MIKKA NISHITANI-GAMO, NOBORU WADA, Toyo University, Japan — AlN nanowires were grown by heating an evacuated quartz ampule which contained InN crystalline powders and an Al substrate at 1300 $\sim$ 1500K. The nanowire samples made were examined by SEM, TEM, EDX, XRD and Raman spectroscopy. Both EDX and Raman spectroscopy yielded that the nanowires should be crystalline InN. Almost all the nanowires exhibited a spherical head at the end, implying that the growth mechanism might be the vapor-liquid-solid (VLS) growth. The diameter typically varied from 30 nm to 500 nm, while the length could be several micron meters long. The nanowire growth was quite significant on the Al substrate close to the InN powder source. When the samples were kept at high temperatures for a longer time, both the spherical heads and nanowires were found to be thicker. The detailed mechanism for the growth and the growth conditions will be discussed.

Noboru Wada
Toyo University

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