Crystal Growth of Low Dimensional Spin Systems

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Crystal growth of the quasi-low dimensional spin systems $(VO)_2P_2O_7$, $LiCuVO_4$, α-CuV_2O_6 and $CuSb_2O_6$ is reported. All substances are characterized by different kinds of instabilities. Vanadylpyrophosphate can be grown from the melt in an atmosphere containing 0.1-0.7 mol % of oxygen. The other compounds decompose before melting inevitably. Therefore these crystals are grown from a flux at lower temperature. The corresponding phase-diagrams solute-solvent were determined. For growth of $CuSb_2O_6$ chemical vapour transport was used as growth method. The crystals were characterized by x-ray diffractometry and EPMA. A short overview of our recent crystal growth program will be given.