Synthesis and characterization of plate-like vanadium doped SrBi4Ti4O15 prepared via KCl molten salt method

Title	Synthesis and characterization of plate-like vanadium doped SrBi4Ti4O15 prepared via KCl molten salt method
Author Order	4 of 5
Accreditation	1
Abstract	SrBi4Ti4O15 is one of four-layered Aurivillius compound family member that can be used as photocatalyst material that works in the violet light region. To expand its work function range can be conducted by doped with metal elements to SrBi4Ti4O15 as results reduced its band gap energy. In this research, we synthesized vanadium doped SrBi4Ti4O15 (SrBi4Ti4-nVnO15 (n= 0, 0.05, 0.1, and 0.15)) by molten salt method (used KCl salt). The diffractogram sample showed that the target compounds SrBi4Ti4-nVnO15 (n= 0, 0.05, 0.1, and 0.15) had been successfully synthesized with the space group A21am without impurities. The SEM micrographs showed the particle shape of SrBi4Ti4-nVnO15 (n= 0, 0.05, 0.1, and 0.15) was plate-like (sheets) and V dopant did not cause agglomeration. The result of Kubelka-Munk equation calculation showed that the V dopant can reduced the band gap energy value from 3.04 eV (408 nm) to 2.84 eV (437 nm)
Publisher Name	Komunitas Ilmuwan dan Profesional Muslim Indonesia
Publish Date	2022-12-28
Publish Year	2022
Doi	DOI: 10.21924/cst.7.2.2022.940
Citation	
Source	Communications in Science and Technology
Source Issue	Vol 7 No 2 (2022)
Source Page	175-180
Url	https://cst.kipmi.or.id/journal/article/view/940/120
Author	Doctor of Philosophy NUR AINI, S.TP, M.P.