Highly sensitive detection of polarized light using a new IV-V group 2D orthorhombic SiP

Chunlong Li, [a] Shanpeng Wang, *[,a,b,] Chenning Li, [a] Tongtong Yu, [a] Ning Jia, [a] Jie Qiao, [a] Min Zhu, [a] Duo Liu, [a,b] and Xutang Tao *[,a,b,]

a. State Key Laboratory of Crystal Materials, Shandong University, Jinan, 250100, China.

b. Key Laboratory of Functional Crystal Materials and Device (Shandong University, Ministry of Education), Jinan, 250100, China.

Table S1. Calculated Γ-point Frequencies of o-SiP Based on DFT

No.	PBE-GGA (cm^{-1})	Exp. (cm^{-1})	Raman mode
1	0	-	A_1
2	15.0	-	A_2
3	16.4	-	A_1
4	98.6	106	A_1
5	108.0	113	A_2
6	116.6	-	A_1
7	132.8	-	A_1
8	139.9	132	A_2
9	160.1	162	A_1
10	161.8	140	A_2
11	180.7	171	A_1
12	220.9	188	A_1
13	235.1	231	A_1
14	248.9	-	A_1
15	280.1	261	A_1
16	297.8	305	A_1
17	348.6	-	A_1

18	379.0	-	A_1
19	390.9	-	A_1
20	429.3	-	A_2
21	442.8	-	A_1
22	445.0	-	A_2
23	449.4	443	A_2
24	455.2	-	A_1
25	472.0	-	A_1
26	476.1	-	A_1
27	484.3	-	A_1
28	488.1	-	A_1
29	496.3	491	A_1
30	523.2	516	A_1
31	537.4	553	A_1

"-" represents the calculated peaks can not be detected in experiments.