

Theoretical Calculation and Experimental Verification for Dislocation Reduction in Germanium Epitaxial Layers with Semicylindrical Voids on Silicon

Motoki Yako¹, Yasuhiko Ishikawa², Eiji Abe¹, Kazumi Wada^{1,3}

¹Department of Materials Engineering, The University of Tokyo ²Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology ³Department of Materials Science and Engineering, Massachusetts Institute of Technology

Corresponding Author

Kazumi Wada

kwada@mit.edu

Citation

Yako, M., Ishikawa, Y., Abe, E., Wada, K. Theoretical Calculation and Experimental Verification for Dislocation Reduction in Germanium Epitaxial Layers with Semicylindrical Voids on Silicon. *J. Vis. Exp.* (), e58897, doi:10.3791/58897 (2020).

Date Published

July 17, 2020

DOI

10.3791/58897

URL

jove.com/video/58897

Materials

Name	Company	Catalog Number	Comments
AFM	SII NanoTechnology	SPI-3800N	
BHF	DAIKIN	BHF-63U	
CAD design	AUTODESK	AutoCAD 2013	Software
CH ₃ COOH	Kanto-Kagaku	Acetic Acid	for Electronics
CVD	Canon ANELVA	I-2100 SRE	
Developer	ZEON	ZED	
Developer rinse	ZEON	ZMD	
EB writer	ADVANTEST	F5112+VD01	
Furnace	Koyo Thermo System	KTF-050N-PA	
HF, 0.5 %	Kanto-Kagaku	0.5 % HF	
HF, 50 %	Kanto-Kagaku	50 % HF	
HNO ₃ , 61 %	Kanto-Kagaku	HNO ₃ 1.38	for Electronics
I ₂	Kanto-Kagaku	Iodine 100g	
Photoresist	ZEON	ZEP520A	
Photoresist remover	Tokyo Ohka	Hakuri-104	
Surfactant	Tokyo Ohka	OAP	
TEM	JEOL	JEM-2010HC	