sustainability

MDPI

Supplementary Materials

Sustainable Production of Ultrathin Ge Freestanding Membranes

Tadeáš Hanuš [1,2,*], Bouraoui Ilahi [1,2,*], Jinyoun Cho [3], Kristof Dessein [3] and Abderraouf Boucherif [1,2,*]

[1] Institut Interdisciplinaire d'Innovation Technologique (3IT), Université de Sherbrooke, 3000 Boulevard de l'Université, Sherbrooke, J1K 0A5, QC, Canada
[2] Laboratoire Nanotechnologies Nanosystèmes (LN2), NRS IRL-3463 Institut Interdisciplinaire d'Innovation Technologique (3IT), Université de Sherbrooke, 3000 Boulevard de l'Université, Sherbrooke, QC J1K 0A5, Canada
[3] Umicore Electro-Optic Materials, Watertorenstraat 33, 2250 Olen, Belgium; jinyoun.cho@eu.umicore.com (J.C.); kristof.dessein@eu.umicore.com (K.D.)
* Correspondence: tadeas.hanus@usherbrooke.ca (T.H.); bouraoui.ilahi@usherbrooke.ca (B.I.); abderraouf.boucherif@usherbrooke.ca (A.B.)

S1: Chemicals used in this work

Table S1. List of chemicals employed in porosification and chemical cleaning of the substrates

Chemical name	Acronym	CAS number	Concentration (wt%)	Density (g/mL at 25 °C)
Hydrofluoric acid	HF	7664-39-3	49	1.15
Ethanol, anhydrous	EtOH	64-17-5	99	0.79
Hydrogen peroxide	H_2O_2	7722-84-1	30	1.45

S2: In-plane pole figure of on-axis Ge FSM

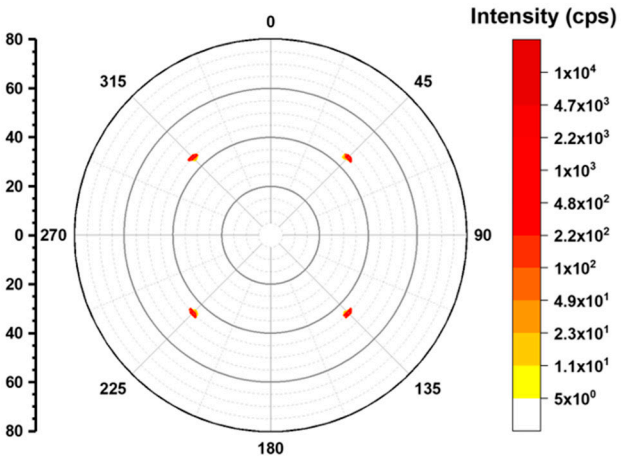


Figure S1. In-plane pole figure of the Ge FSM around Ge (220) axis deposited on the on-axis Ge substrate.

S3: Optical image of PGe layer on epi-ready substrate

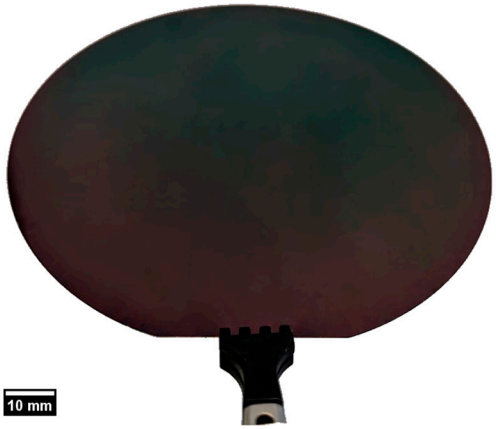


Figure S2. Optical image of uniform PGe layer on epi-ready substrate.