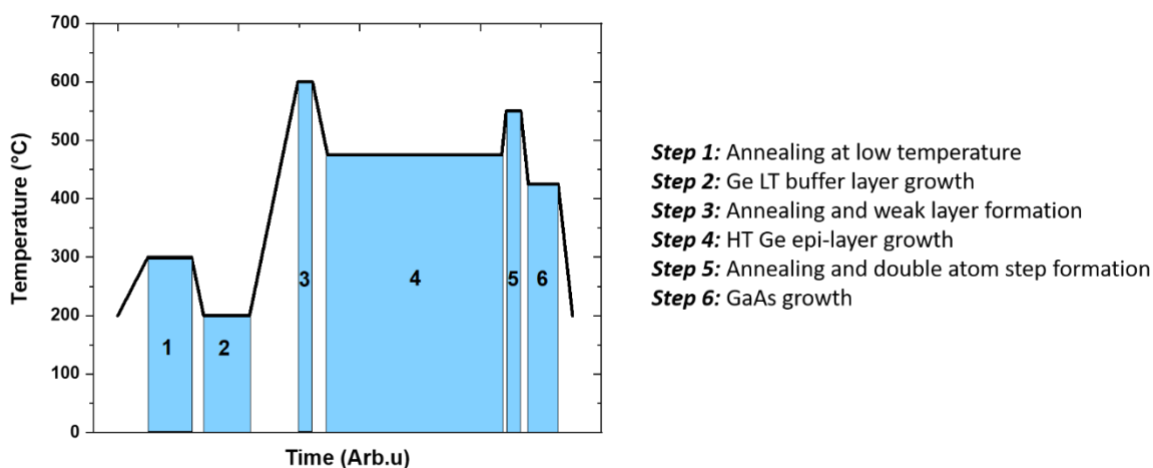


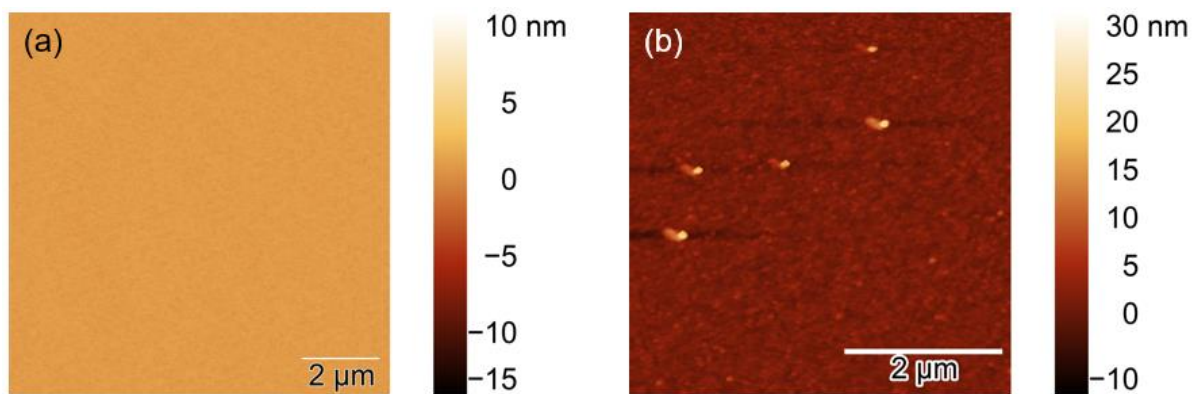
## Supporting Information

### Wafer-scale detachable monocrystalline Germanium nanomembranes for the growth of III-V materials and substrate reuse

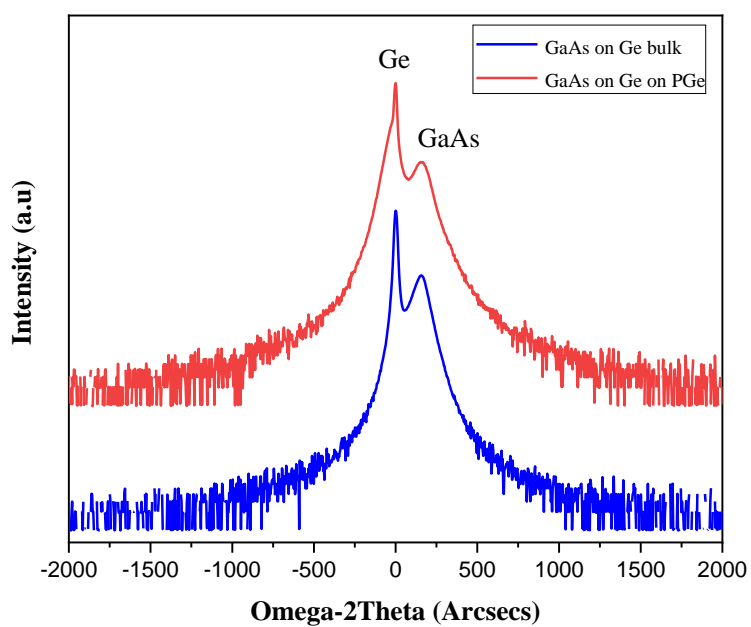
*Nicolas Paupy, Zakaria Oulad Elhmaidi, Alexandre Chapotot, Tadeáš Hanuš, Javier Arias-Zapata, Bouraoui Ilahi, Alexandre Heintz, Alex Brice Pougoué Mbeunmi, Roxana Arvinte, Mohammad Reza Azizyan, Valentin Daniel, Gwenaëlle Hamon, Jérémie Chrétien, Firas Zouaghi, Ahmed Ayari, Laurie Mouchel, Jonathan Henriques, Loïc Demoulin, Thierno Mamoudou Diallo, Philippe-Olivier Provost, Hubert Pelletier, Maïté Volatier, Rufi Kurstjens, Jinyoun Cho, Guillaume Courtois, Kristof Dessen, Sébastien Arcand, Christian Dubuc, Abdelatif Jaouad, Nicolas Quaegebeur, Ryan Gosselin, Denis Machon, Richard Arès, Maxime Darnon & Abderraouf Boucherif\**



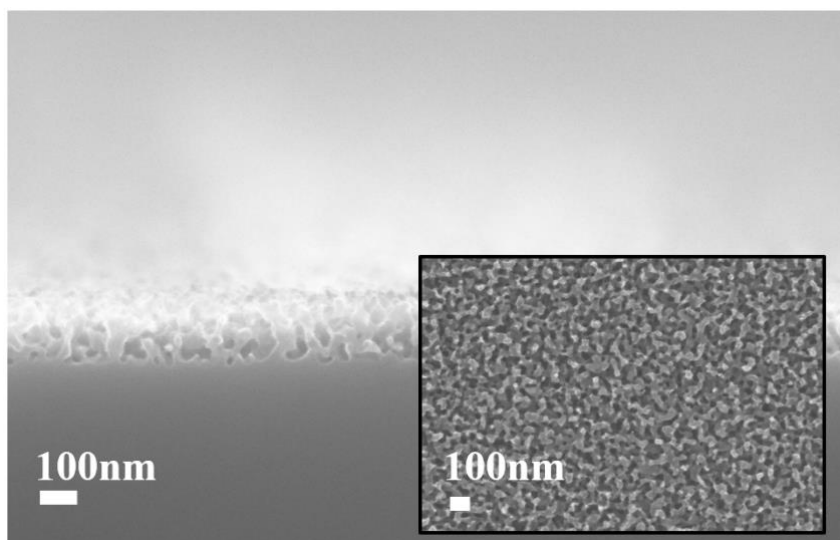
**Fig. S1:** Schematic diagram of the epitaxial growth process.



**Fig. S2.** AFM scan of (a) bulk substrate (10 μm x 10 μm) (b) the porous layer after the first cycle (5 μm x 5 μm)



**Fig. S3.** HRXRD analysis of GaAs on Ge bulk and GaAs on Ge/PGe taken around (004)



**Fig. S4.** Cross-section SEM images as-detached substrate.