

Supplementary information

Dealloying behavior of rapidly solidified Al-Ag alloys to prepare nanoporous Ag in inorganic and organic acidic media

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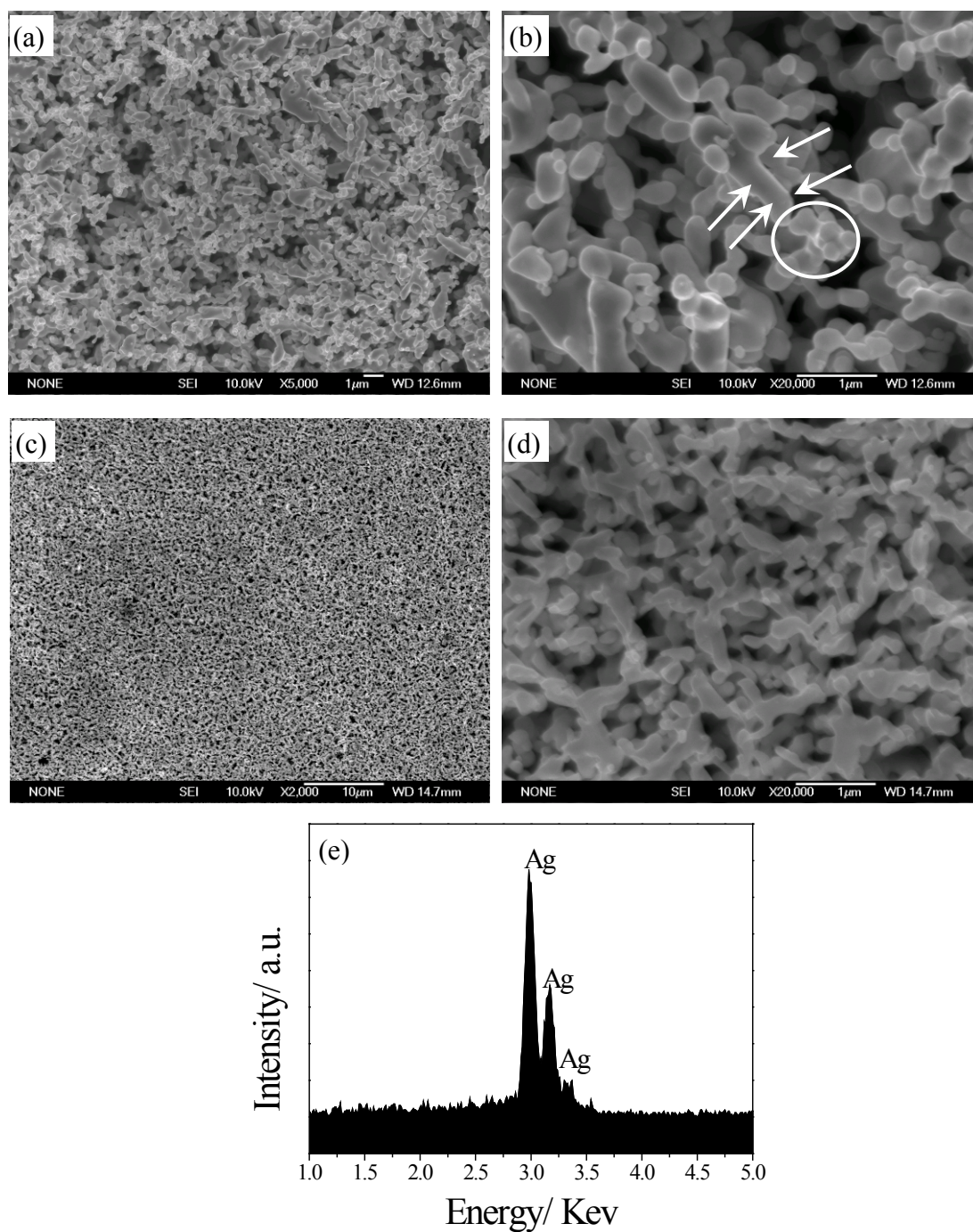


Figure S1. Plan-view SEM images showing the microstructure of NPS through chemical dealloying of the (a, b) Al-15Ag and (c, d) Al-25Ag ribbons in the 10 wt.% H_3PO_4 solution. (e) a typical EDX spectrum showing the whole composition of NPS.

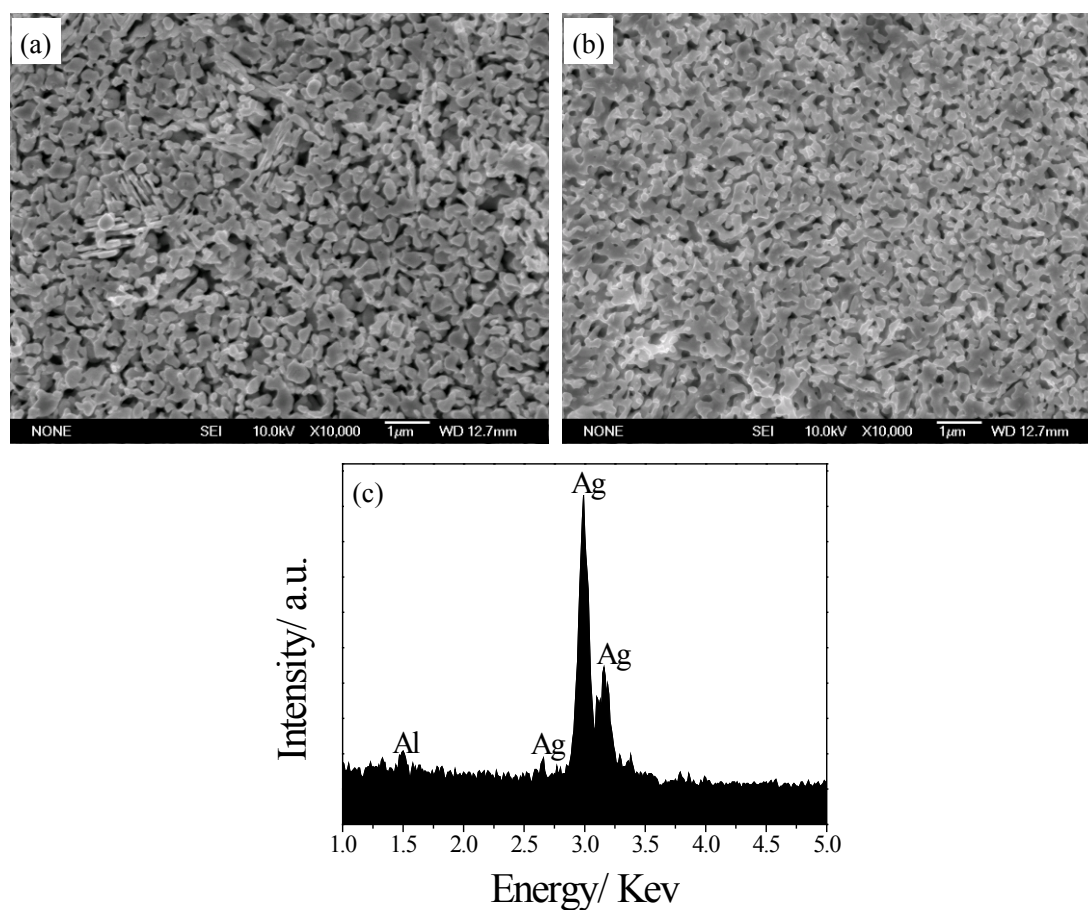


Figure S2. Plan-view SEM images showing the microstructure of NPS through chemical dealloying of (a) Al-35Ag and (b) Al-45Ag ribbons in the 10 wt.% H_3PO_4 solution. (c) a typical EDX spectrum showing the whole composition of NPS.

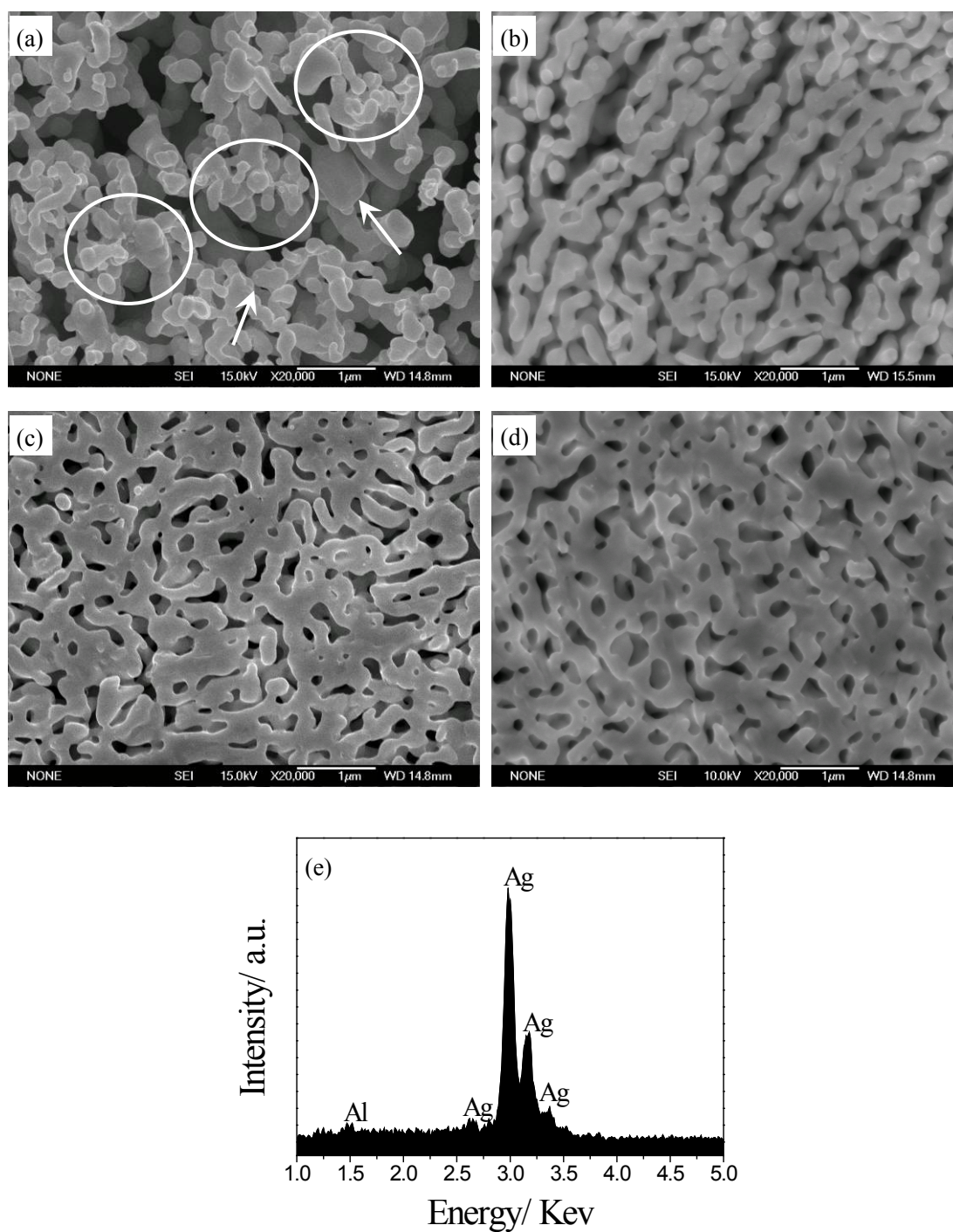


Figure S3. Plan-view SEM images showing the microstructure of NPS through chemical dealloying of (a) Al-15Ag, (b) Al-25Ag, (c) Al-35Ag and (d) Al-45Ag ribbons in the 10 wt.% $C_2H_2O_4$ solution. (e) a typical EDX spectrum corresponding to the as-dealloyed Al-45Ag ribbons.

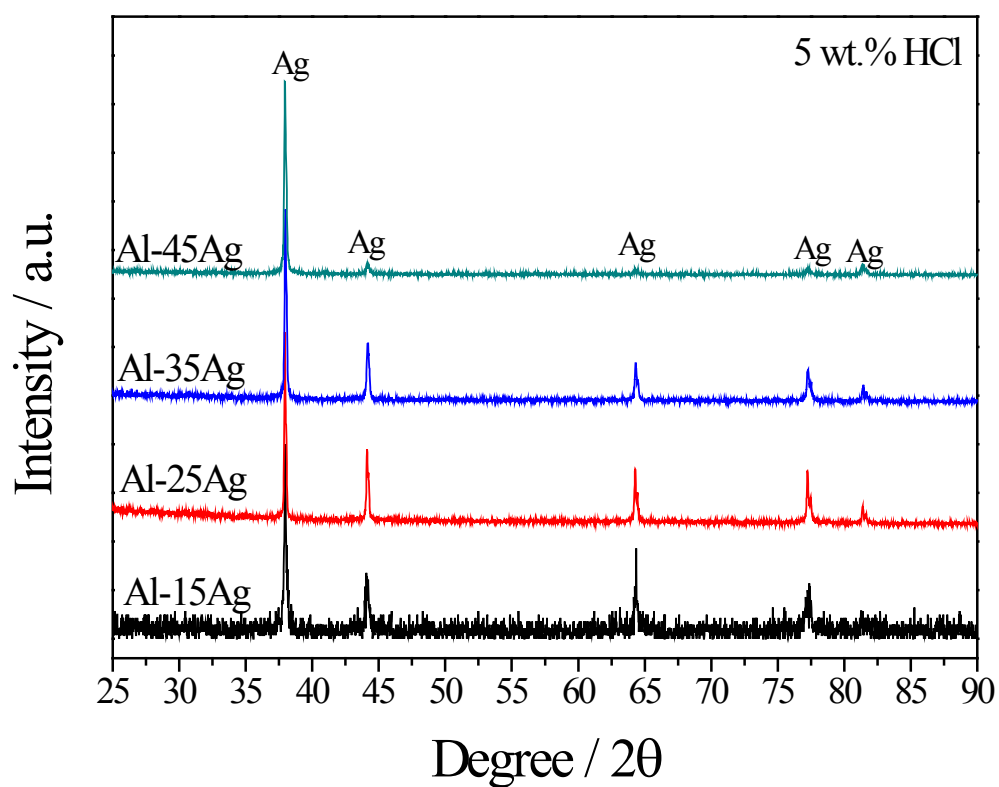


Figure S4. XRD patterns of the as-dealloyed Al-Ag alloy ribbons dealloyed in the 5 wt.% HCl solution.

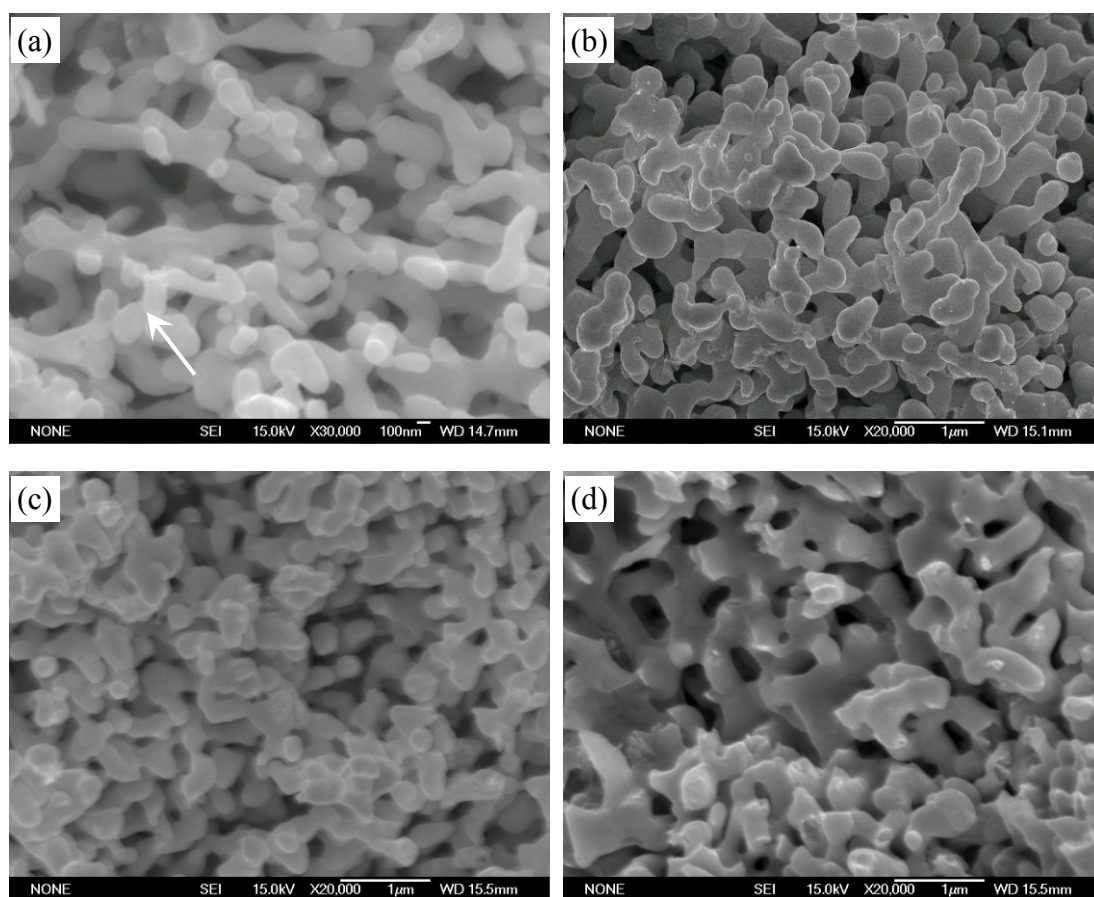


Figure S5. Section-view SEM images showing NPS ribbons by dealloying Al-15Ag (a), Al-25Ag (b), Al-35Ag (c) and Al-45Ag (d) precursors in the 5 wt.% HCl solution.

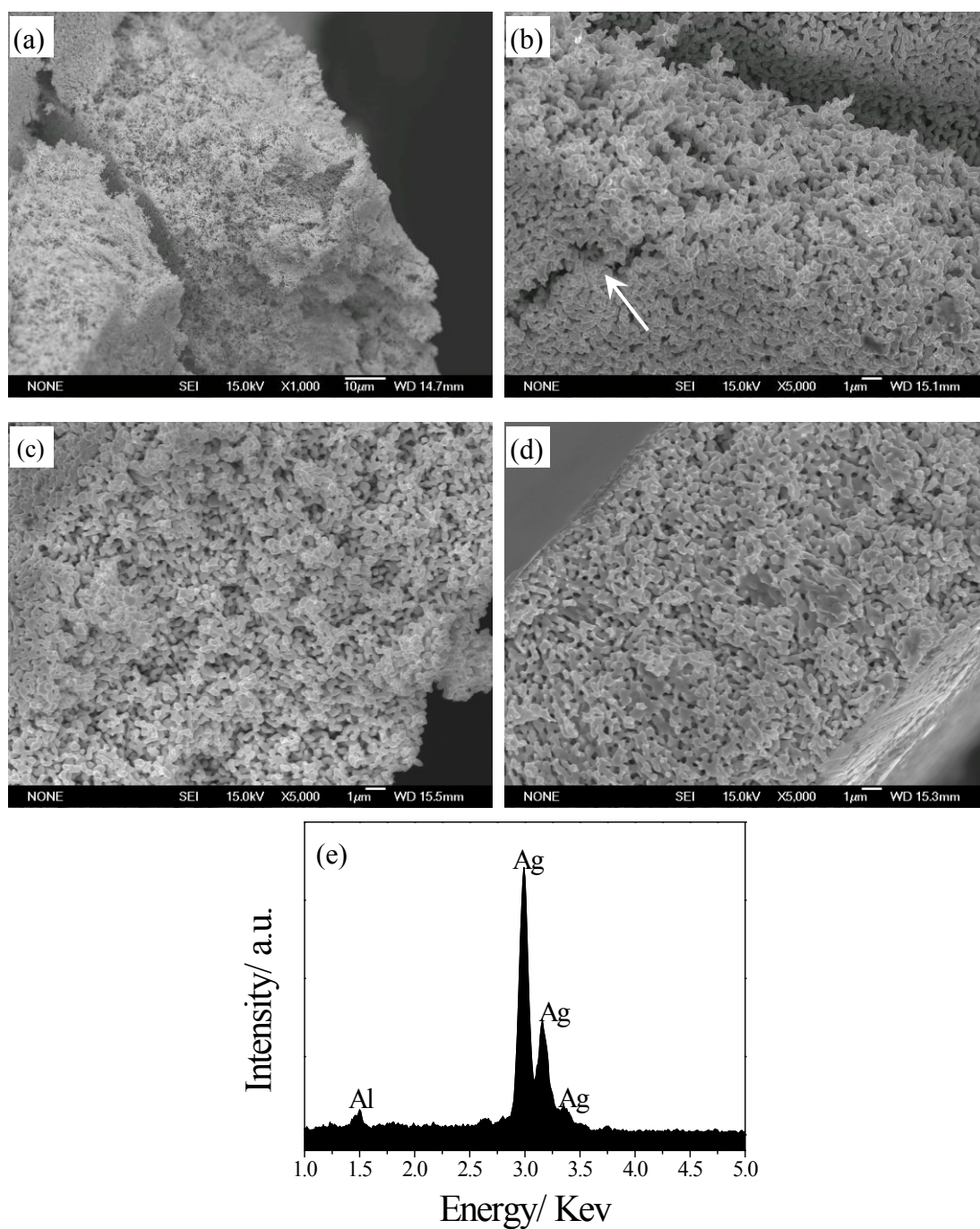


Figure S6. Section-view SEM images showing the microstructure of NPS through chemical dealloying of (a) Al-15Ag, (b) Al-25Ag, (c) Al-35Ag and (d) Al-45Ag ribbons in the 5 wt.% HCl solution. (e) a typical EDX spectrum corresponding to the as-dealloyed Al-45Ag ribbons.

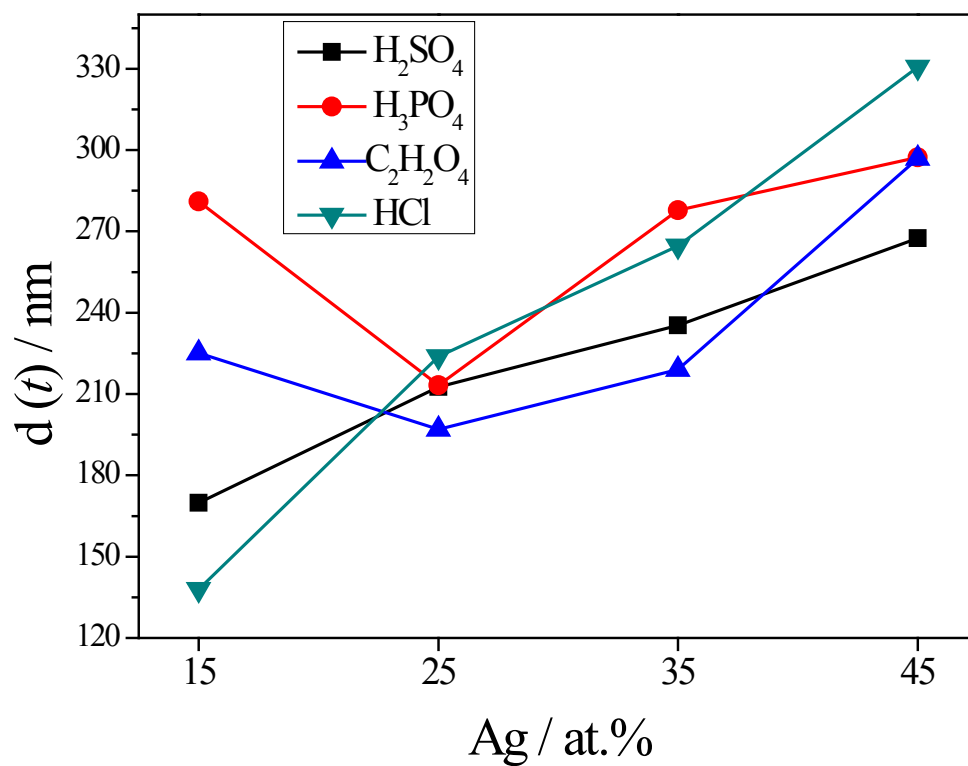


Figure S7. Relationships between ligaments size of NPS dealloyed in four acid solutions and the alloy composition.

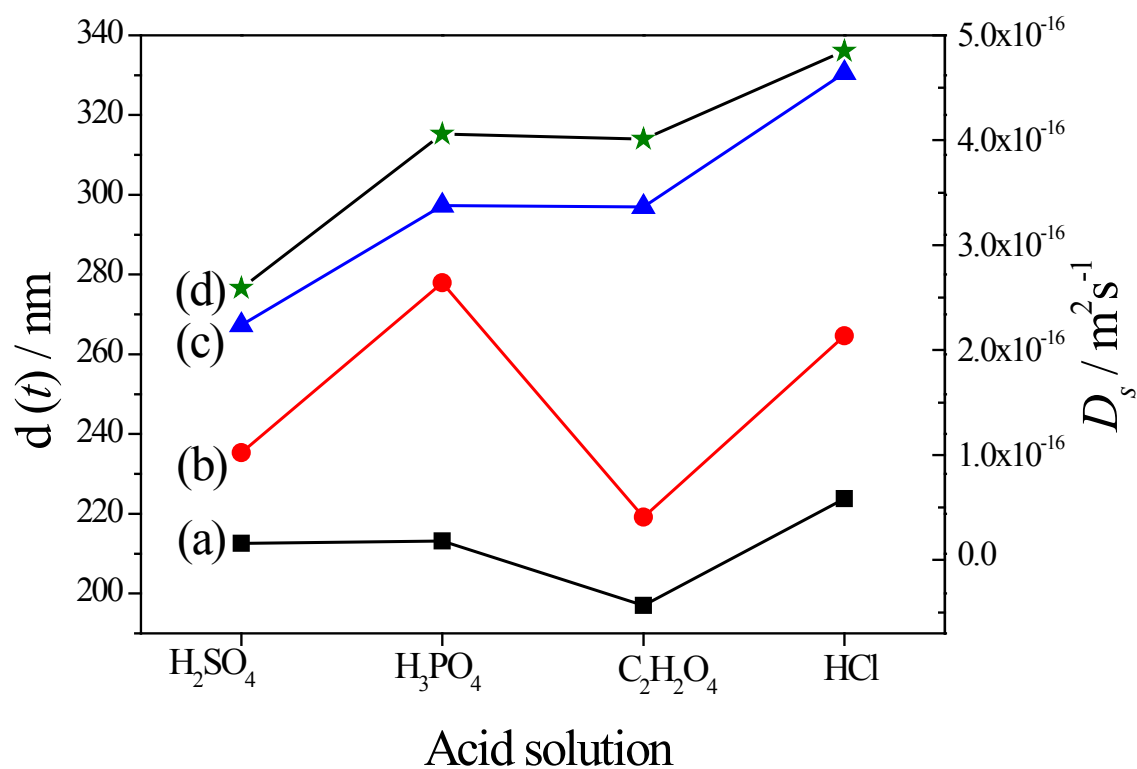


Figure S8. Dependence of ligaments size of the NPS by dealloying of Al-25Ag (a), Al-35Ag (b), and Al-45Ag (c), and D_s of Ag atoms (d) on the acid kinds.