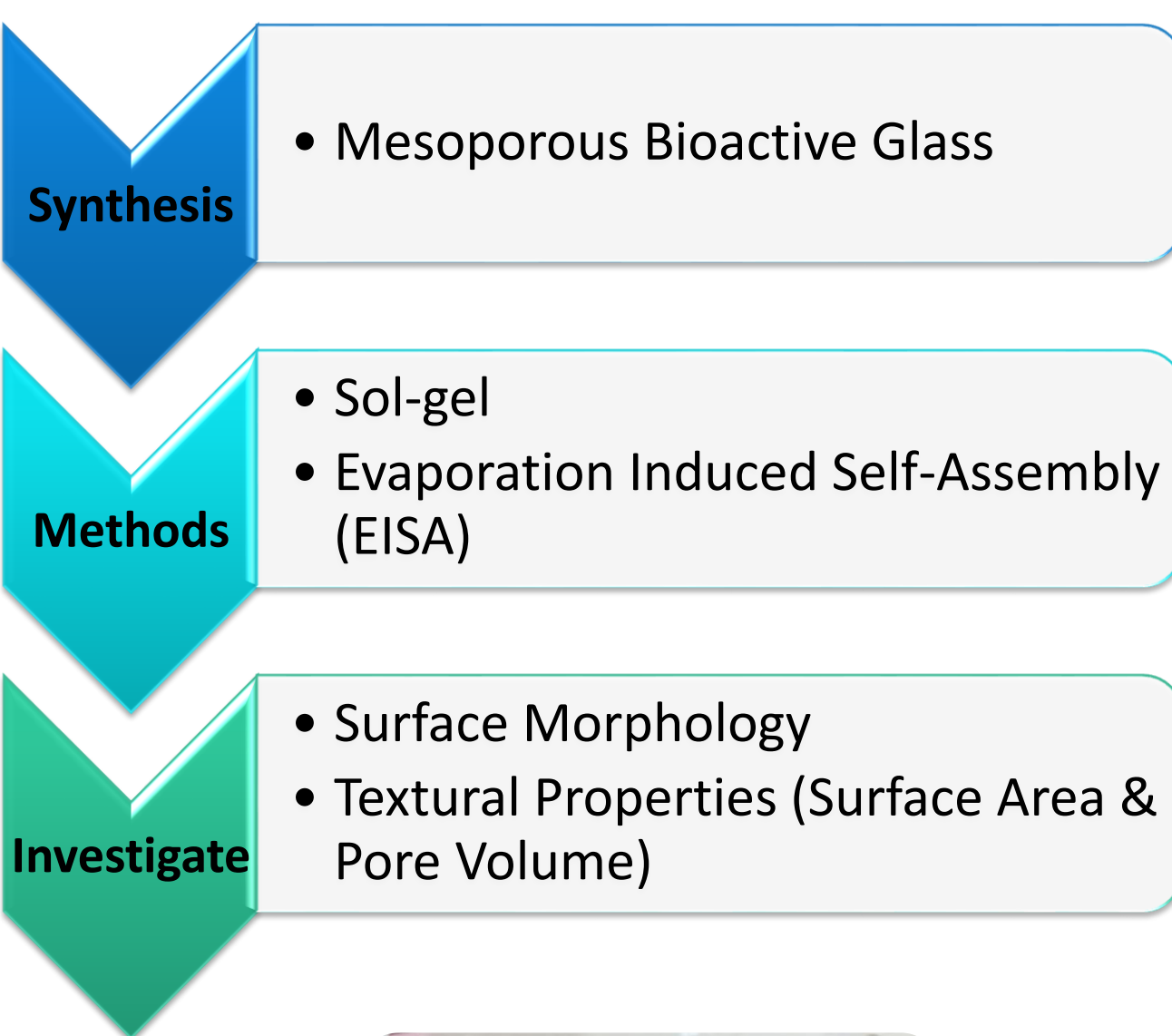


INTRODUCTION

- Biomaterials → Structure & Properties → Metal, Ceramics, Composite, Polymer [1]
- Biomaterials → Biological response → Bio inert, Bioactive, Bioresorbable [1]
- Bioactive Ceramics form a hydroxyl-carbonate-apatite (HCA) layer on their surface by modification and kinetic modification [2]
- Doping of silver in glass compounds causes antibacterial properties, biocompatibility and biodegradability [3]
- Porous materials → porosity size → macroporous, mesoporous, microporous [4]
- Synthesis of Mesoporous bioactive ceramic → surfactant [5]
- Surfactant → cationic, anionic, non-ionic, and amphoteric [5]
- The surfactant Pluronic F127 has the chemical formula EO106PO70EO106 → generally forms a cubic mesoporous structure for silicate compounds [6]

OBJECTIVES



MATERIALS & METHODS

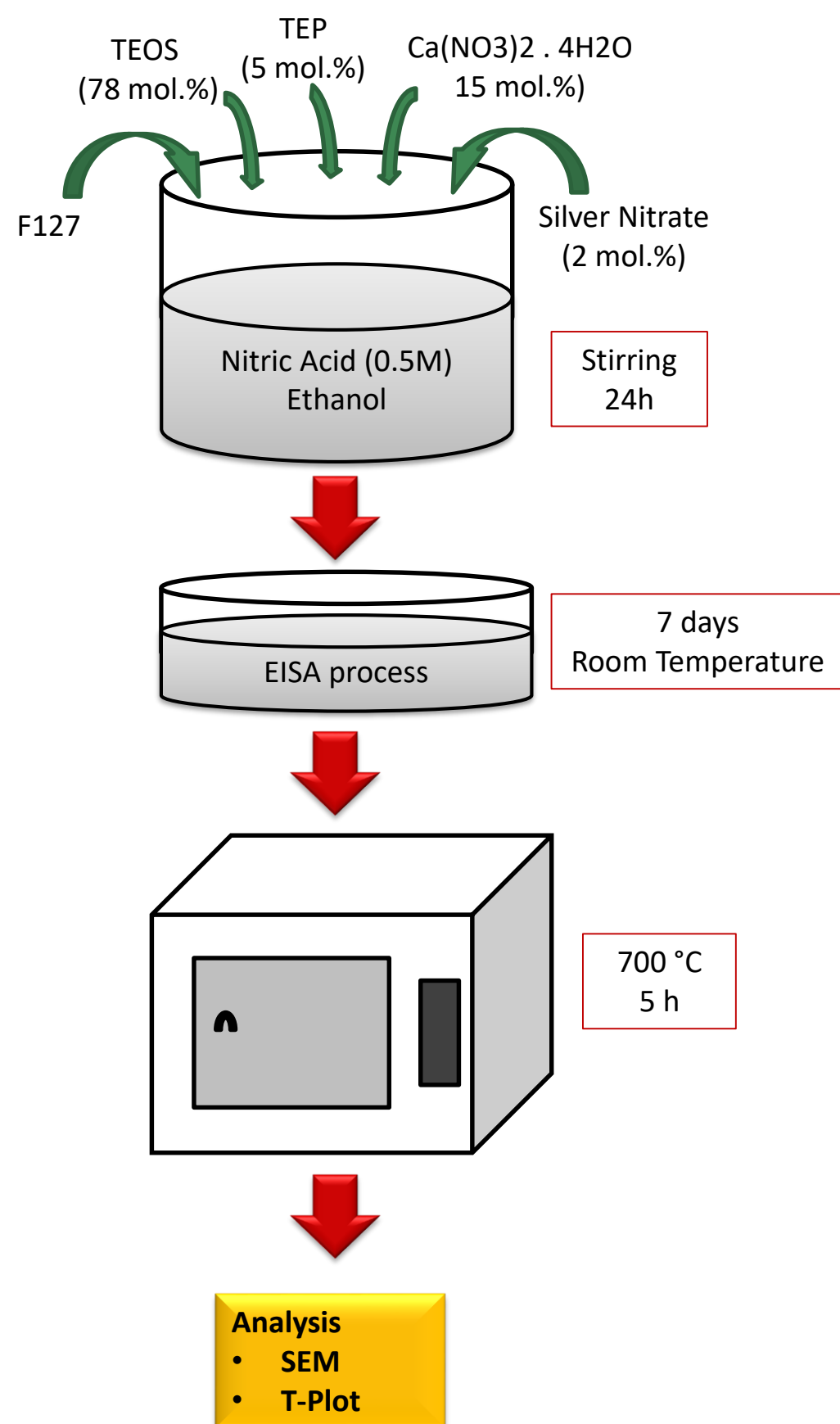


Table 1: The amounts of surfactant used for sample preparation.

Samples	Surfactant (g)
S-0.35	3.2
S-0.40	3.6
S-0.44	4

RESULTS

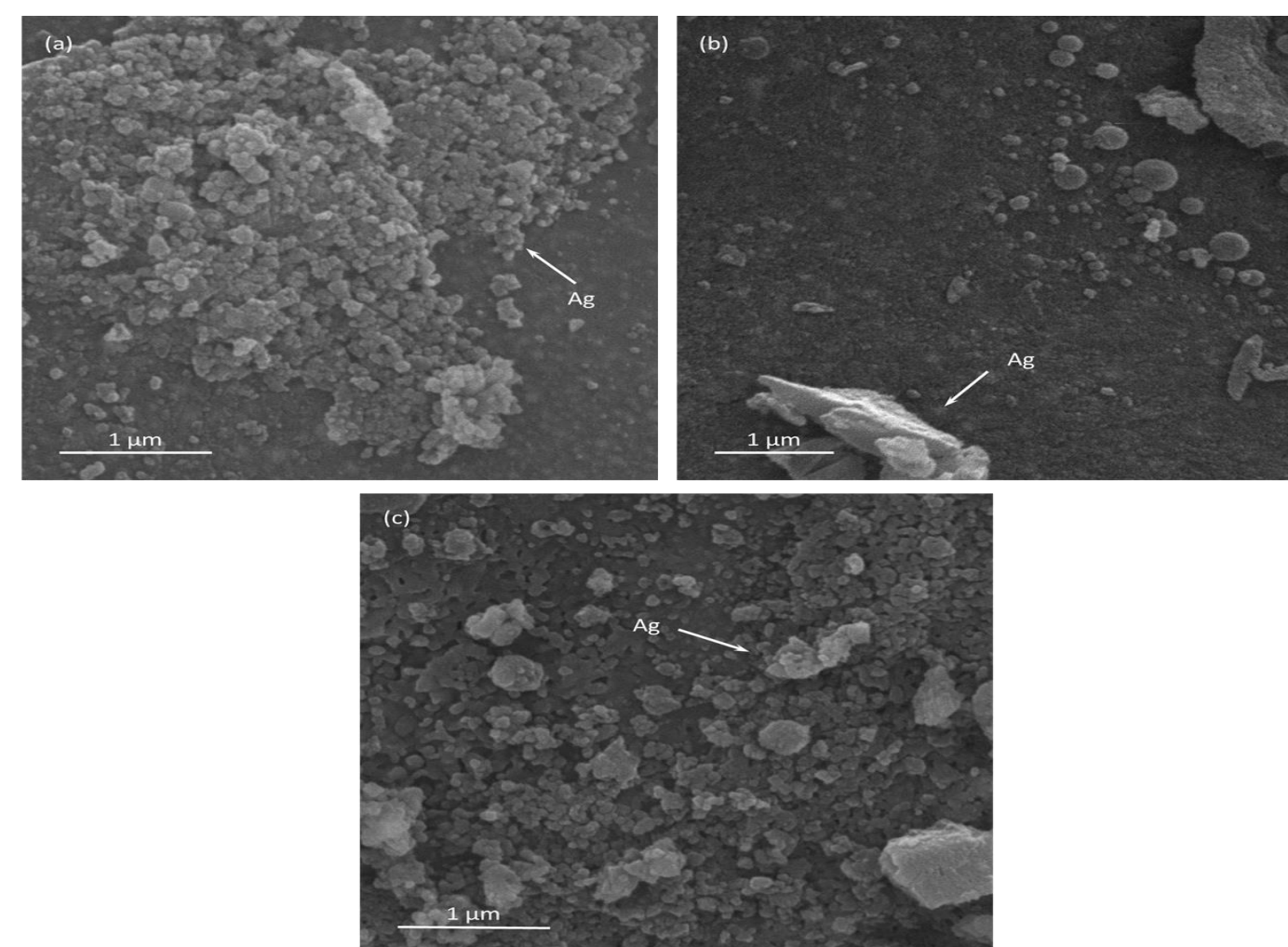


Figure 1: SEM micrographs of a)S-0.35, b)S-0.40 and c)S-0.44 samples

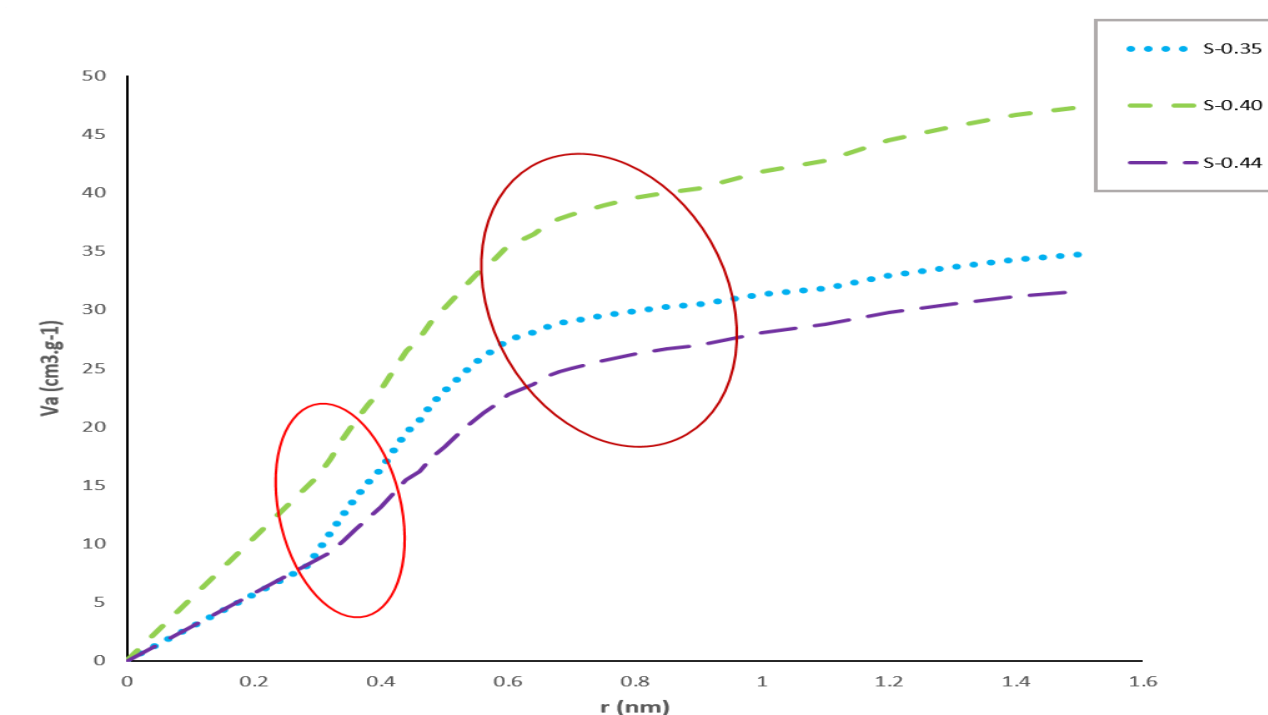


Figure 2: t-plot diagram of samples

Table 2: t-plot data of samples.

Sample	External surface area (m ² .g ⁻¹)	Pore volume (cm ³ .g ⁻¹)	Surface area (m ² .g ⁻¹)
S-0.35	6.870	0.0435	71.482
S-0.40	10.751	0.057	92.042
S-0.44	6.561	0.039	58.102

CONCLUSIONS

SEM:

- ✓ the ceramics surface is smooth and homogeneous
- ✓ Ag particles were decorated on ceramic particles

T-Plot:

- ✓ there are meso-sized porosities in all three samples
- ✓ sample S-0.40 has a higher specific surface area, external surface area and pore volume → it is a more desirable sample → tissue engineering and drug delivery applications

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