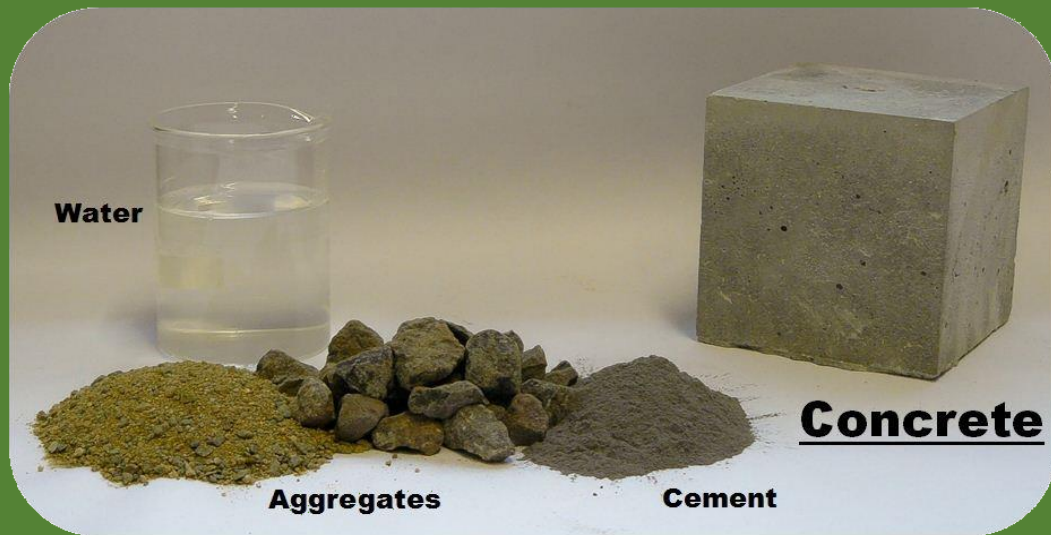
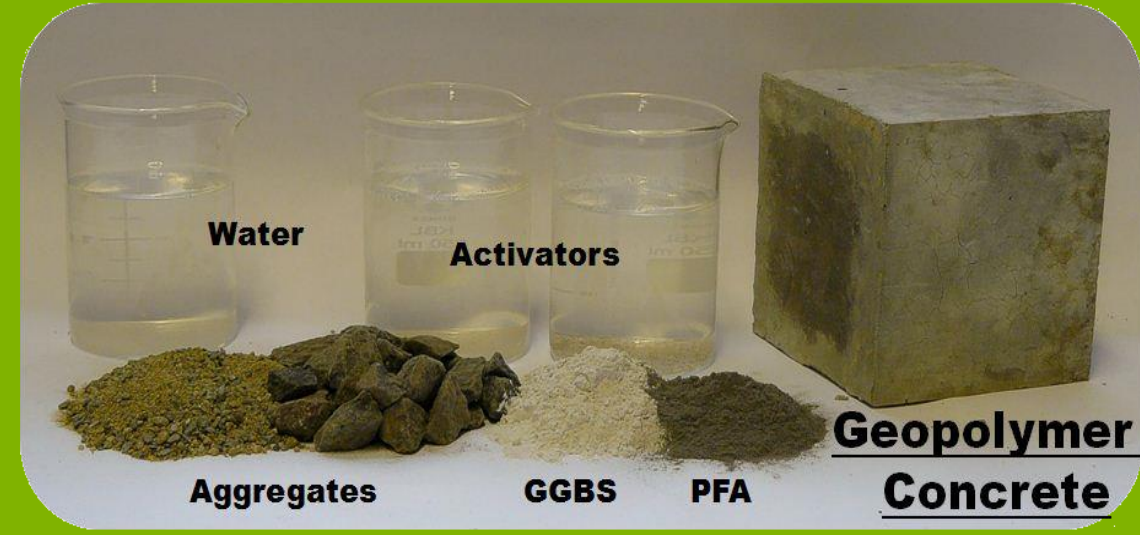


ALKALI-ACTIVATED MATERIALS (AAMs) MIX DESIGN AND CHALLENGES

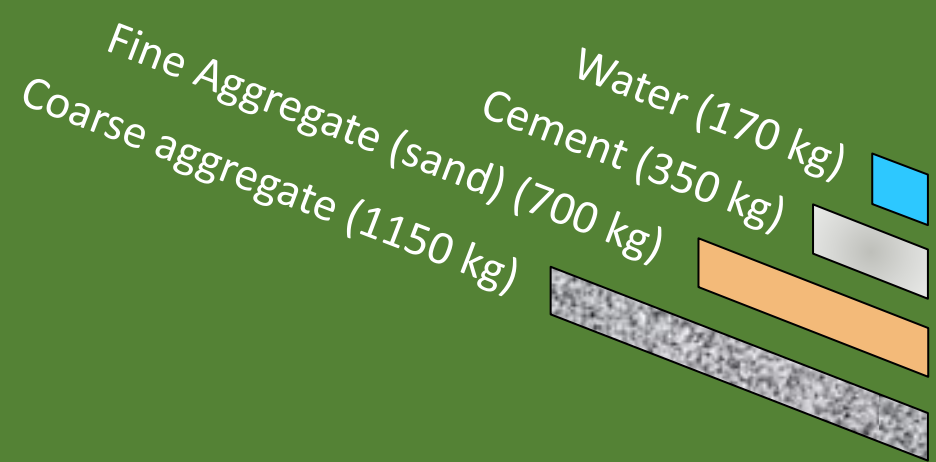
ALKALI-ACTIVATED MATERIALS (AAMs)
RECIPT & RAW MATERIALS



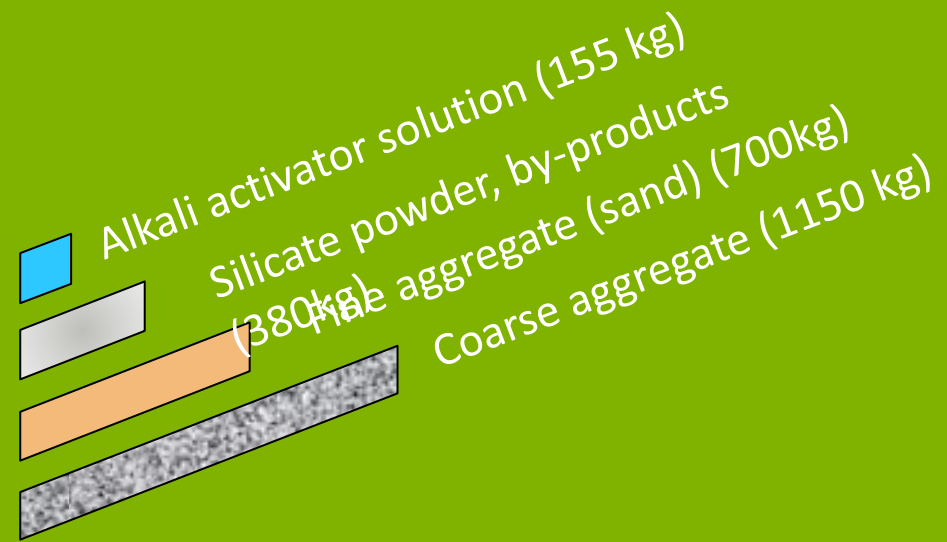
Traditional Mix



AAMs Mix



50 MPa target compressive strength



PRECURSORS SUITABLE FOR ALKALI-ACTIVATIONS

INDUSTRIAL BY-PRODUCTS

COAL POWER STATIONS



FLY ASH



STEEL PRODUCTION



GGBS



NATURAL DEPOSIT

METAKAOLIN

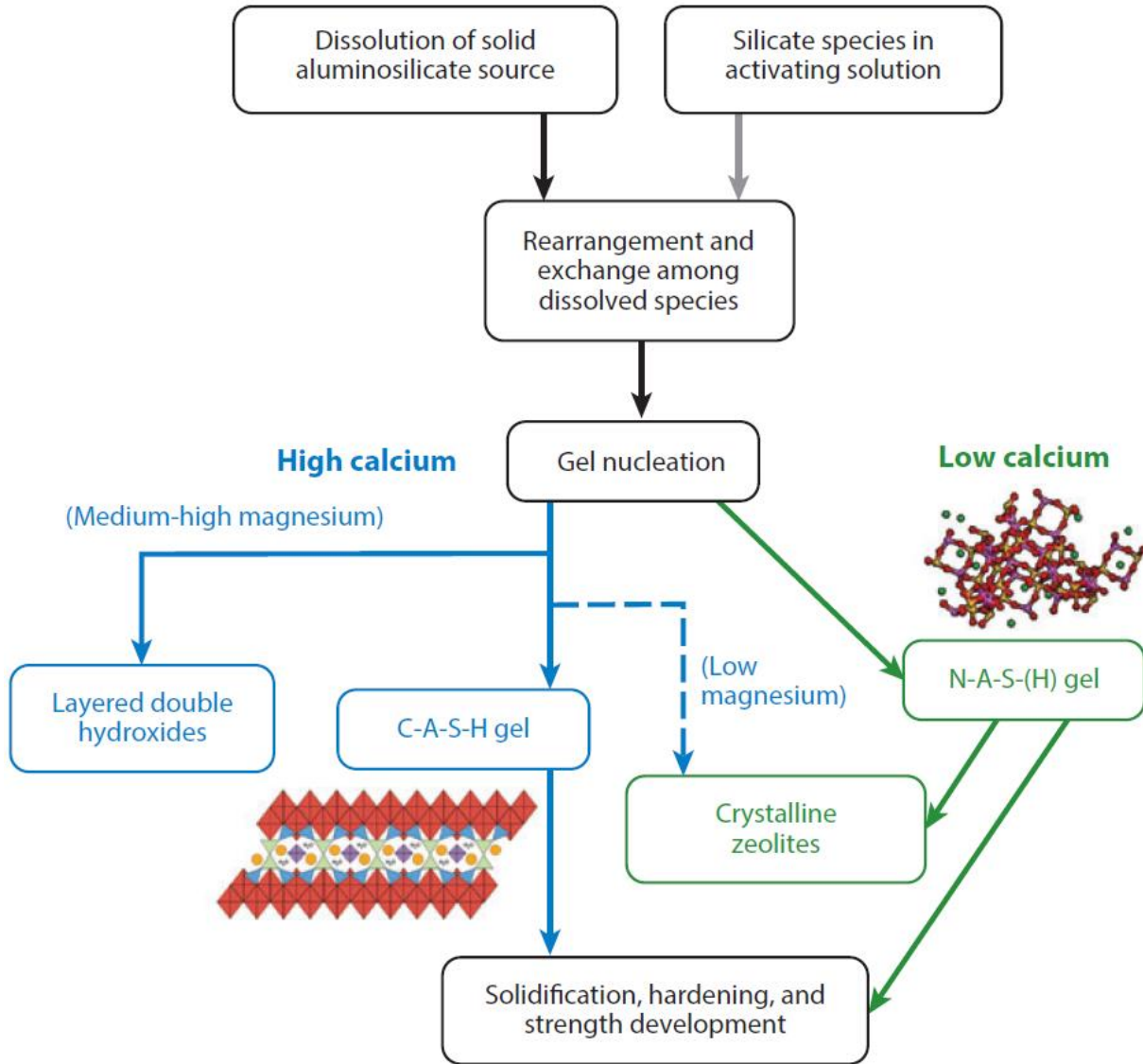


CALCINED CLAY



REACTION MECHANISM

PROCESS AND REACTION PRODUCTS



Provis, J.L., Bernal, S.A., Geopolymers and related alkali-activated materials, Annu.Rev.Mater. Res. 2014, 44:299-327

FACTORS AFFECTING THE STRENGTH DEVELOPMENT

LIQUID TO BINDER RATIO

ALKALINE ACTIVATOR AND PRECURSORS COMPOSITION

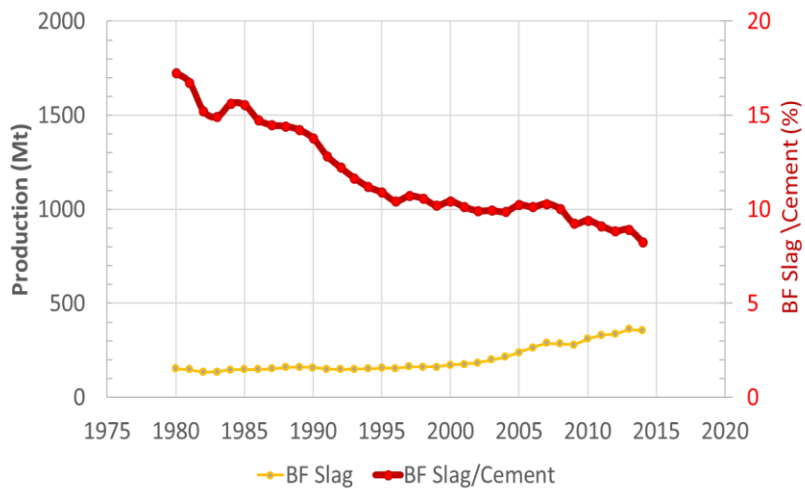
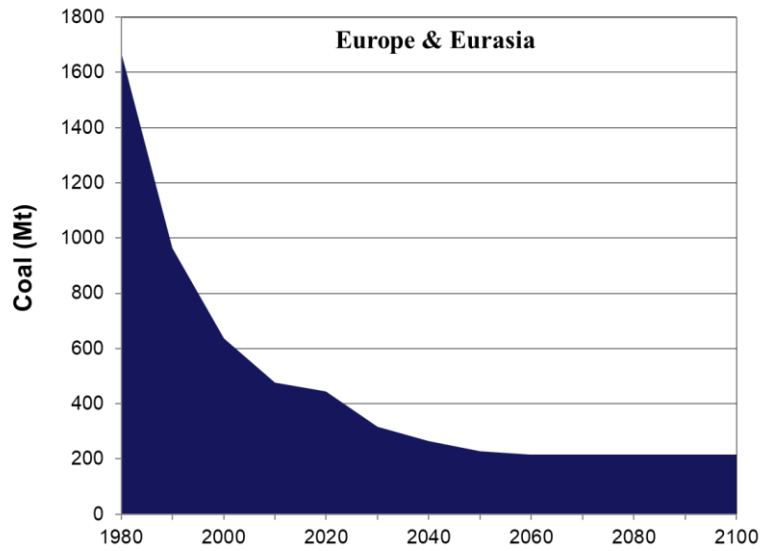
MIXING CONDITIONS

CURING CONDITIONS

ADMIXTURES

CHALLENGES

BY-PRODUCTS AVAILABILITY



UTILISATION OF LOCAL INDUSTRIAL BY-PRODUCTS



IN EUROPE AVAILABILITY OF FLY ASH AND GGBS IS DECREASING



ALTERNATIVE BINDER OR OPC REPLACEMENT TO REDUCE GHG EMISSIONS

WORKABILITY



