



ΠΑΝΕΠΙΣΤΗΜΙΟ
ΠΑΤΡΩΝ
UNIVERSITY OF PATRAS

Ideas & perspectives

for research cooperation in the future



Prof. Vagelis G. Papadakis

*Department of Environmental
& Natural Resources Management*

UNIVERSITY OF PATRAS

Agrinio, Greece

Materials

- **Supplementary cementing materials (SCM)**

(in addition to silica fume, fly ashes, slags)

- rejected common SCM (high-calcium fly ash, slags, etc.)
- metakaolin
- biomass ashes (rice husk ash, olive kernel ash, wood & pellet ash, etc.)
- industrial ashes & by-products (paper sludge ash, petcoke ash, red mud, etc.)
- mixtures of various SCM for targeted properties

- **Alternative sources for aggregates**

- ferrous-nickel slag
- recycled concrete

- **New cements**

- exploring all types of EN 197 and more
- low energy & emissions cements
- new cementing materials

Modeling

- **Modeling of deterioration phenomena**

(in addition to carbonation and chloride attack)

- corrosion propagation
- chemical attack
- sulphate attack
- alkali silica reaction
- biochemical attack
- frost action
- combined mechanisms

- **Estimation of concrete properties**

(in addition to concrete strength, diffusivity, sorptivity, etc.)

- fresh concrete properties
- action of chemical admixtures
- strength development

Techniques, Products, Services

- **Self-healing**

- sustainable by-products as SCM impregnated with encapsulated fibres
- utilisation of encapsulated biopolymers
- incorporation of coated clinker particles and encapsulated compounds
- controlled alkali silica reaction

- **Special concrete & mortars**

- multi-functional (light-weight, isolation, purification, etc.)
- sustainable & durable

- **Software**

(in addition to EUCON®)

- durability characteristics' estimation
- virtual laboratory
- environmental cost & sustainability analysis
- optimization of mix design

Calls for Proposals, Others

- **FP7 – Horizon 2020**
 - limited calls of FP7
- **EACI, Eco-Innovation**
 - September 2013
- **LIFE+**
 - June 2013
- **Others**
 - Interreg
 - National & Structural Funds
 - Private funds

Contact

Prof. Vagelis G. Papadakis

*Department of Environmental
& Natural Resources Management*

University of Patras

GR-30100, Agrinio, Greece

Tel.: +30 6932 327323

E-mail: vgpapadakis@upatras.gr

