**309 - Chemical and physical stability of geopolymers containing fly ash produced in heavy fuel power plants**

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In Jordan, large amounts of fly ash (FA) are produced from heavy fuel composition in power stations. The produced fly ash is highly contaminated with heavy metals including V, Ni, Zn and Fe. Geopolymer containing different amounts of FA was fabricated for sake of minimising the mobility of toxic elements. Using local kaolinite, fly ash and NaOH mixture, five geopolymers were prepared at room temperature and cured at 80oC at the following ratios: Si/Al: 1.68-4.71, Na2O/Al2O3: 1.48-1.84, Na/Al: 0.74 0.92. The

maximum compressive strength was observed for the geopolymer containing no fly ash, 28 Mpa at day 1 and dry sample. A geopolymer containing 10% FA showed promising results where a compressive strength of 23 Mpa was reported. The porosity of FA was partially destroyed after polymerisation process as indicated from SEM pictures and XRD analysis; new phases have been created under the action of pressure.

**Monday, March 26, 2012 08:00 PM**
[**Sci-Mix (08:00 PM - 10:00 PM)**](http://abstracts.acs.org/chem/243nm/program/divisionindex.php?nl=1&act=presentations&val=Sci-Mix&ses=Sci-Mix&prog=107363)
**Location: San Diego Convention Center**
**Room: Hall D**

**Thursday, March 29, 2012 11:15 AM**
[**Waste Forms for Environmental Remediation (08:00 AM - 12:00 PM)**](http://abstracts.acs.org/chem/243nm/program/divisionindex.php?nl=1&act=presentations&val=Waste+Forms+for+Environmental+Remediation&ses=Waste+Forms+for+Environmental+Remediation&prog=107363)
**Location: Manchester Grand Hyatt**
**Room: Windsor C**