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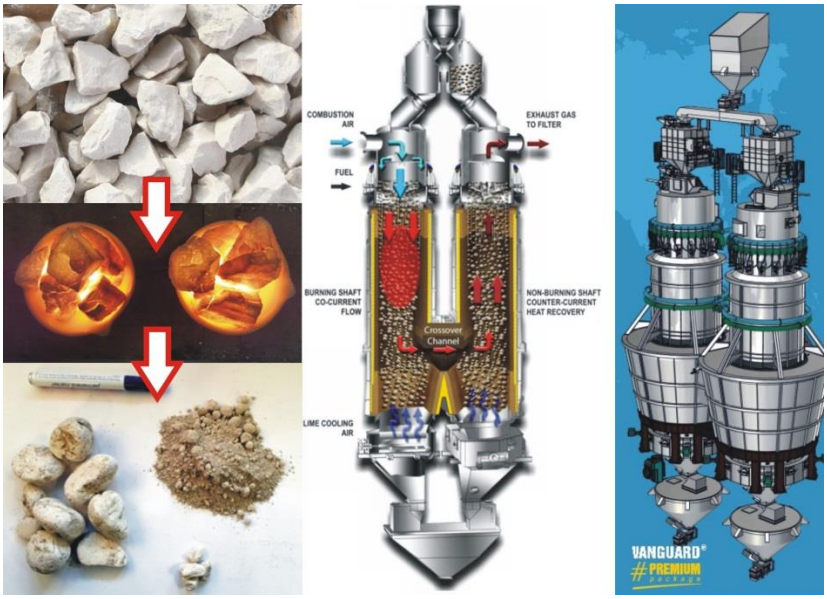
DIPARTIMENTO DI GEOSCIENZE

Seminario di "Avvio al lavoro"

The reactivity of quicklime: a topic of industrial interest in different industrial sectors

Giovedì, 17 ottobre – ore 16:30
Aula Arduino

Relatore: **Dott. Geol. Gabriele Vola, PhD**
Cimprogetti S.r.l. Lime Technologies, Dalmine (Bergamo)



Abstract

The reactivity of quicklime became a matter of considerable interest for steelmaking with the introduction of the basic oxygen converter steel furnace during the 50s of the last Century. The use of quicklime instead of limestone and the rapid acceptance of this technology during the 60s, caused the definitive substitution of open hearth steelmaking furnaces, and created parallel revolution within the lime industry. Nowadays, the lime reactivity plays a critical role in different industrial processes and especially to make a good slag facilitating the removal of sulphur and phosphorous and for providing a safer platform to withstand high intensity arc plasma in the electric arc furnace, and violent reactions in the basic oxygen furnace. The lime reactivity is also required as fundamental process parameter in several industrial sectors, e.g. for acids neutralization, pH stabilization and flue gas desulfurization. A PhD research activity was recently performed at the University of Ferrara to study quicklime products for different industrial applications. The heating behavior or burnability of different carbonate rocks, i.e. mainly high-grade limestones, dolostones and marbles was investigated considering typical aggregate sizes and temperatures occurring in Twin Shaft Regenerative (TSR) kilns. Nowadays TSR kilns are the best technology to achieve the goal of soft-burnt reactive quicklime, maintaining low specific energy consumption and reduced gas emissions, thus represent the best compromise for lowering costs, reducing the environmental impact.

Proponente: **M. Chiara Dalconi**