

25,000 Year-old Geopolymer Ceramic ? Low-Temperature Manufacture of Prehistoric Black Ceramic

Ralph Davidovits, Frédéric Davidovits and Joseph Davidovits,
Geopolymer Institute, 02100 Saint-Quentin, France, www.geopolymer.org



The oldest ceramic ever manufactured, the 25,000 year-old *Venus from Dolni Vestonice*, is displayed at the Anthropology Museum, at Brno, Czech Republic. We have been taught that the terra cotta pottery was not invented before the Neolithic Age, 15,000 years later. And yet, the Venus is a ceramic resulting from the use of fire, at a time when, logically, prehistoric man did not master this technique, according to the teaching of Prehistory. Like all other Paleolithic Venus, it is only 11 cm high. It is of brown-black color.

We have reproduced the Venus in an open wood fire (a garden fire), at a temperature of 250-400 °C maximum, with a clay containing alkaline soluble salts, generating a geopolymeric reaction. The Table gives a list of plants and hard woods, the ashes of which could have supplied the alkalis, silica and lime.

	SiO ₂	CaO	MgO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃
beech : trunk	5.4	56.4	10.9	3.6	16.4	5.4	1.8
beech : branches	9.8	48.0	10.6	2.4	13.8	12.2	0.8
beech: leaves	33.8	44.9	5.9	0.7	5.2	4.7	3.6
oak	2.0	72.5	3.9	3.9	9.5	5.8	2.0
apple tree	2.7	70.9	5.5	1.9	11.8	4.5	2.7
hazelnut tree	1.07	81.50	5.20	0.40	2.80	-	-
acacia	5.50	74.2	2.10	0.30	9.60	3.70	2.70
fern	6.1	14.1	7.6	4.6	42.8	9.7	5.1
bulrush	11.0	9.4	6.3	6.6	36.6	6.3	8.8
reed	71.4	6.0	1.3	0.26	8.6	2.1	2.8
heather	53.2	18.8	8.3	5.3	13.3	5.0	4.4
barley straw	53.8	7.5	2.5	4.6	21.2	4.3	3.6
wheat husk	68.53	7.23	1.88	-	8.03	2.23	-
rice husk	92.83	0.46	0.49	0.00	1.94	-	-



a) molding of a clay paste containing 2% by weight of NaOH powder and 30% water.



b) drying at low temperature, around the garden fire up to 230°C.



c) setting and coloring in fire, without flame, but smoke.



d) the collection of items black-colored in the same fire



e) modern imitations of the Venus (without any shining wax)

Details
in the book
*Geopolymer
Chemistry &
Applications*

