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Position paper mixed ceramic and porcelain on mud example applications

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Abstract

It has been observed that organic or inorganic materials such as grass, straw, fibrous plants, plant roots and mineral additives have been added to the ceramic bodies in order to be stronger throughout history. The use of paper as an additive material. It is known that in the past years, a mixture called 'Papier Mache' in India has been used in papermaking in ceramics. Nowadays, many ceramic artists use paper additives in their artistic applications. Cellulosic fibres are a ceramics body since it prevents creaking of the ceramic during the course of drying of the ceramic due to its binding properties when mixed with clay as well as its lightness after firing. In this study, the use of the paper additive in kaolin, some sample applications and samples from artist works have been presented.

Keywords: Porcelain, artistic ceramic, paper additive ceramic.

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1. Historical process

Ceramics has been made according to the areas to be used the stone, grass, straw, fibrous plants, plant roots and mineral additives have been added to the ceramic body in order to make the products more robust. It is seen that these additives are more common, especially in the ceramic products called rough products in the Late Chalcolithic period. Except this, the mud brick, which has been used for centuries in Anatolia and in some parts of the world as a building material, is obtained by mixing straw with mud and sun-dried is defined as an uncooked brick. The straw in the mud brick absorbs the mud water just as it is in the fibres of paper clay it shows a very strong structure after drying (Alkan, 2005, p. 14)

Using paper as the additive material is known to date back to a mixture of so-called 'Papier Mache', which is made from paper-based ceramics in India in the past years. Uncooked papier mache clay (Lerzan & Ayse, 2012, p. 121), which is derived by adding fragrant spices, purebred rag, paper, grass, ostrich, mango leaves, iron burrs, sand, rice husks and bamboo into the clay and is used to make religious icons and ceremonial objects (Lerzan & Ayse, 2012, p. 121).

Later, Jean Pierre Beranger made a ceramic plate with thin paper added in a mixture of porcelain clay and paper dough in France in 1897. In the same period, paper-added ceramic muds were similarly made in Japan and America. In Japan, coloured paper-added mud in the form of sheets which seems to be coloured paper was prepared and used in origami. In America, the same product which was prepared in Japan was prepared in the 1980s, it was offered for sale at the stores as artistic material. (Alkan, 2005, p. 15)

Jaromir Kusnik from Australia made experiments on the use of paper in the ceramics body. Kusnik studied ceramics chemistry and made experiments by mixing paper clay into clay, thus made the pioneer of paper clays. In the following years, it was used by Graham Hay, Jill Hodson and Penny (Lindsay) King at Edith Cowan University in Western Australia. Graham Hay specialises in paper clays (Alkan, 2005, p. 15).

In addition to Australia, a group of ceramic artists in Canada, including Alex Sorotschynski and Jennifer Clark and Denise Buckley, studied on paper clays. Apart from these, American ceramic artist Rosette Gault also did some experiments. Rosette Gault's research was later published as an article in International Ceramic Magazines such as *Ceramics Monthly* and *New Zealand Potter* also by writing a book she ensured the recognition of this material. Apart from that, Brian Gartside published his studies as articles in various International Ceramic Magazines. In Turkey, there are also ceramic artists who study on paper clays. First of all, we can talk about Gungor Guner. The artist's paper clay wall panels in the dimensions of 90 × 90 cm made in Eczacibasi Art Studio are the first examples.

2. Artists having studies on paper clays and their examples

2.1. Brian Gartside

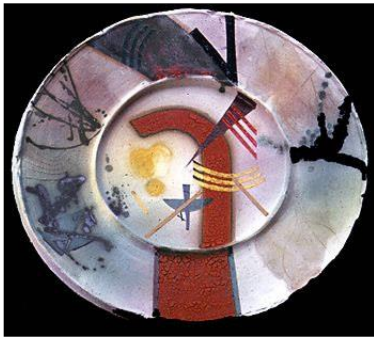
Brian Gartside Wales, who is a British ceramic artist and, one of the artists who did studies on paper clays extensively ensured the recognition of paper clay in England through the plates made of paper clays in his study in International Ceramics Festival in 1993. He has published articles on paper clays in many International Ceramic Magazines. The artist who has artworks in the collection of art museums in New Zealand reflected New Zealand with very strong colours and with geographical symbols and pictures to the plates and vases. The artist continues his artistic work in Pukekohe, a rural area in New Zealand.



Picture 1. Wall Panel in Paper-Added Stoneware Body. Diameter: 50 cm
(<http://www.gartside.info/the-past/wall-pieces/index.html>)



Picture 2. Paper-Added Stoneware Body. Wall Panel Diameter: 45 cm



Picture 3. Raku Firing And Salt Glaze Firing. Wall panel in wall added stoneware body. Diameter: 50 cm
(<http://www.gartside.info/thepast/wallpieces/index.html>)



Picture 4. Raku Firing And Salt Glaze Firing. Wall panel in Wall added stoneware body. Diameter: 40 cm

2.2. Rosette Gault

American ceramic artist Rosette Gault, born in New York, is an artist who studies on paper clays through his creative personality and his published works. She has published many articles and books about the subject. She opened more than 130 exhibitions. She collected her research studies on paper clays in the book entitled 'Paper clay'. She established the company named 'New Century Ceramics' and patented the paper clay. She runs her studies in her workshop in Seattle



Picture 5. 'A Love Bird Soars in My Body Sky'
(<https://ceramicartsnetwork.org/daily/ceramic-supplies/ceramic-raw-materials/homemade-paper-clay-choose-prepare-paper-mixing>)



Picture 6. Application on Wall-added porcelain body
(<https://ceramicartsnetwork.org/daily/ceramic-supplies/ceramic-raw-materials/homemade-paper-clay-choose-prepare-paper-mixing>)

2.3. Graham Hay

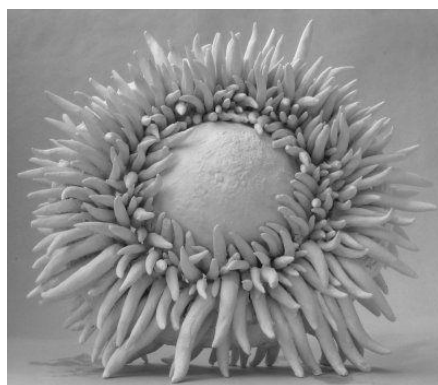
Graham Hay, an Australian ceramic artist, learnt to study on paper clays from Jaromir (Mike) Kusnik, a ceramic technology trainer in the university. Graham, who has been conducting intensive research studies on the subject afterwards, has become one of the people who has been shown as an authority on paper clays in the world. He wrote articles in *Ceramics Review*, *Ceramic Monthly* and *Ceramics Technical* magazines on the subject and set up an informative website. Graham, who has been doing intensive research studies on paper clays since 1992, takes the subject of human beings in the complex forms, the institutions made up by human beings and the relations between them, the social structure of the society and the small units that make up it. To express these facts in their own way, they benefit from architectural and natural forms. He still continues to study in his own studio in Perth (Alkan, 2005, p. 22).



Picture 7. Terracotta paper added form
50 × 30 × 20



Picture 8. Earthenware paper added form
29 × 24 × 8



Picture 9. Porcelain Paper-
Added Ceramic Form



Picture 10. Earthenware Paper-
Added Ceramic Form

(https://www.google.com.tr/search?tbm=isch&q=graham+hay&chips=q:graham+hay,online_chips:paper+clay&sa=X&ved=0ahUKEwjggYn5sKLCaHWpD3cQ4IYIKigD&biw=1366&bih=662&dpr=1)

2.4. Ewen Henderson

Ewen Henderson, British ceramic artist and sculptor studied ceramic, took lessons from Hans Cooper and Lucie Rie at Camberwell Art School in London. The artist has used paper clays together with bone porcelain to create different effects with various linings. His works usually consist of large-scale works which resemble forms such as corals under the sea and volcanic parts under the sea. The artist succumbed to cancer and died in 2000.



Picture 11. Paper-added ceramic form



Picture 12. Paper-added ceramic form



Picture 13. Paper-added ceramic form

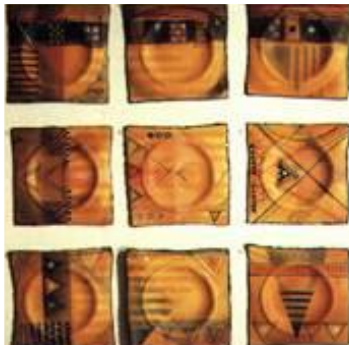


Picture 14. Paper-added ceramic form

(https://www.google.com.tr/search?tbm=isch&q=ewen+henderson+pottery&chips=q:ewen+henderson+pottery,online_chips:sculpture&sa=X&ved=0ahUKEwiHpLqfsaLcAhXO0aYKHcN5Ae8Q4IYIKSgC&biw=1366&bih=662&dpr=1)

2.5. Anne Lightwood

Anne Lightwood, Scottish ceramic artist, encountered with paper clay in the presentation by Brian Gartside at Edinburgh International Ceramics Festival in Edinburgh in 1993 in England. After this meeting, she started to study on paper clays and supported the employees. She used paper clay, the versatile material, together with porcelain bodies to make thin and patterned bowls as well as in large wall panels (Alkan, 2005, p. 26).



Picture 15. Porcelain paper-added ceramic form



Picture 16. Porcelain paper-added ceramic form

(https://www.google.com.tr/search?tbm=isch&q=Anne+Lightwood&chips=q:anne+lightwood,online_chips:paperclay&sa=X&ved=0ahUKEwj2pffHsaLcAhWJ0qYKHbn-DnUQ4IYILCgF&biw=1366&bih=662&dpr=1#imgsrc=ukqJkvwgxYkLcM:)

2.6. Val Lyle

Val Lyle, American ceramic artist who mostly carried out figurative works used paper clays.



Picture 17. Paper clay form

(https://www.google.com.tr/search?tbm=isch&q=Val+Lyle+&chips=q:val+lyle,online_chips:sculpture&sa=X&ved=0ahUKEwjVmp-rsqLcAhXhDpoKHWRxDGUQ4IYIKCgB&biw=1366&bih=662&dpr=1)



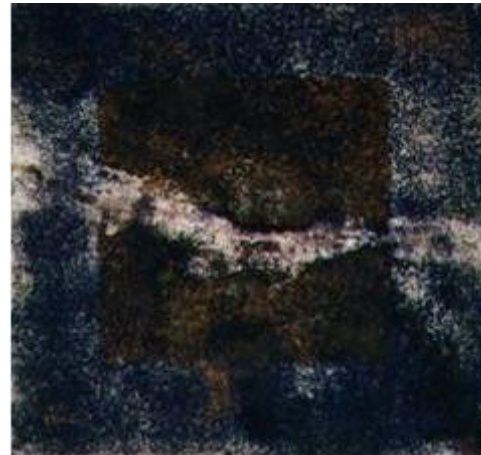
Picture 18. Paper clay form

2.7. Gungor Guner

Gungor Guner made ceramic panels in the dimensions of 90 × 90 cm by mixing paper-mache which increases the resistance of the ceramic and ensures the alleviation of the body in the process of forming for the first time in 1997 and glazed them with ash glaze. Several ceramic artists together with the artist who ensures the recognition of paper clay in Turkey use paper clays in their studies now. We can list some names such as Dilek Alkan, Lerzan Ozer, Irfan Aydin, Yildiz Sermet, Reyhan Gurses, Asli Aydemir and Omur Tokgoz.



Picture 19. Paper-Added Ash Glazed.
Wall Panel 90 × 90 Gungor Guner



Picture 20. Paper-Added Ash Glazed.
Wall Panel 90 × 90 Gungor Guner

(Alkan, 2005, p. 25)



Picture 21. Paper-Added stoneware ceramics



Picture 22. Stoneware ceramic form Dilek Alkan

(Alkan, 2005, p. 79)



Picture 23. Paper-added porcelain arrangement Lerzan Ozer

(<https://www.google.com.tr/search?q=lerzan+%C3%B6zer&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKewiR9ry5taLcAhVz0aYKHSZ-BJ8QsAQILQ&biw=1366&bih=662#imgrc=QIkTuFKU2yHbhM>)
(<https://www.murekkephaber.com/irfan-aydinin-apollon-ile-faresi-d-art-gallery-de/1426/>)



Picture 24. Paper clay Irfan Aydin



Picture 25. Paper clay form Yildiz Sermet

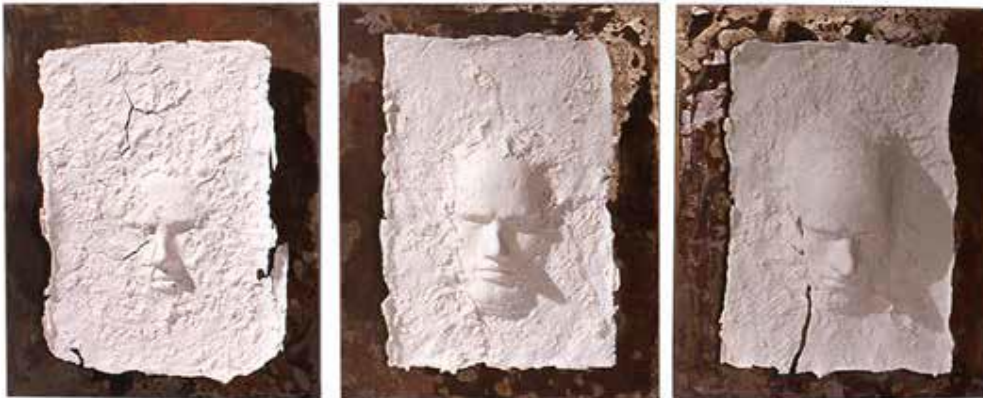


Picture 26. Paper clay form Reyhan Gurses

(<https://tr.pinterest.com/pin/504895808217065417/?lp=true>)
(Lerzan & Ayse, 2012, p. 125)



Pictures 27 and 28. Paper-Added Porcelain Omur Tukgoz (Lerzan & Ayse, 2012, p. 121)



Picture 29. Paper-Added Porcelain Asli Aydemir (Lerzan & Ayse, 2012, p. 121)

3. The identification of paper and ceramic bodies used in paper clay and experiments

In order to make experiments on paper-added ceramic structures, four types of ceramic bodies were first identified; porcelain mud, red mud, mud with chamotte and fine chamotte called creaton. Three types of paper are usually found suitable for these structures: toilet paper, A4 paper and paper of the egg rolls. During the preparation phase of the paper clays, first of all, the papers were cut into very small pieces. The papers separated into small pieces were weighed as dry and placed in a bucket

for 1 day after adding hot water four times as much as the weight of the paper. So, the paper was dissolved in the water. The paper was then mixed thoroughly with the hand blender, which we used in the kitchen the next day until it was pulped and it was made ready to be mixed with the mud.

The determined mud was dried, milled and weighed. In the later stage, the paper was again mixed with the paper-mache by using a hand blender and laid on plaster plates after dumping the excessive water the mud was ready for use after being kneaded.

With the prepared paper-added mud, kneading water, drying-curing and bulk shrinkage and water absorption experiments were performed. The percentage of paper in the mud was prepared as 10%, 20% and 30%. As a result of the experiments, the kneading water has increased in this direction by increasing the amount of paper used in the kneading water in each body. The plasticity ratio decreases as the mixing water ratio increases. In the case of dry bulk reduction experiments, the shrinkage ratios increased as the paper addition ratio increased. In the water absorption experiment, the porosity increased and the water absorption rate also increased due to the increase of the paper ratio.

The paper clay applications were performed with porcelain mud. The experiments were made by adding 20% paper additive according to the result. Three types of applications were made by freehand forming, turning and stamping. Some of the applications were performed in the electric furnace and the glaze was baked at 1200°C some of them were performed raku firing.



Picture 30. Shaping Paper clay Mud
(Height: 35; Width: 30 cm)



Picture 31. Shaping Paper clay Mud
(Height: 20; Width: 40 cm)



Picture 32. Paper-Added Porcelain Mud in Ceramic Body Mold
(Height: 25 cm; Width: 30 cm)



Picture 33. Shaping Paper-Porcelain Body—Raku firing
(Height: 35 cm; Width: 7 cm, 30 cm, 5 cm)



Picture 34. Shaping Paper clay with the method of turning—Raku firing Picture (Height: 15 cm; Width: 25 cm)



Picture 35. Shaping Paper clay with the method of turning—Raku firing (Height: 10 cm; Width: 7 cm)

4. Result

The use of paper clays is also increasing among the artists in our country. In addition to its advantages such as lightness after firing, ease of repairing cracks during the drying process, there are also disadvantages such as difficulties in keeping conditions in the preparation stage and bad smell caused by waiting.

According to the results of experiments and applications; as the paper ratio increases, the shrinkage rate increases. The wet mud can easily adhere to the dried body. It can be worked with the thicker wall with paper-added porcelain mud. After firing, the weight is reduced as much as the amount of added paper and this ensures lightness to the form. Surface texture increases due to the increase in the paper additive.

In the scope of this study, it is thought that thanks to the advantages of using paper additives in the porcelain, it will help the artists to work as artistic applications, especially as a very useful mud for large size porcelain sculpting applications.

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