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THE EMERGENCE OF SILICEOUS-PASTE IN IRAN IN THE LAST QUARTER
OF THE 11TH CENTURY AND RELATED ISSUES.
THE DATED ASSEMBLAGE FROM THE SOUTHERN DOMED HALL
OF THE GREAT MOSQUE OF ISFAHAN¹

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Among the most interesting findings of the Italian excavations in the Great Mosque of Isfahan (carried on by the IsMEO-IsIAO in the 1970s and presently under study)² is an assemblage of pottery fragments (6203 glazed + 15130 unglazed) provided with a precise chronological indication, given by the sealed stratigraphic contexts where it was found.³ These are the foundation trenches of the Southern domed hall (fig. 1), whose construction took place during the reign of Malik Šāh (1073-1092) - as the inscription on the drum attests -, probably in the winter between 1086 and 1087.⁴

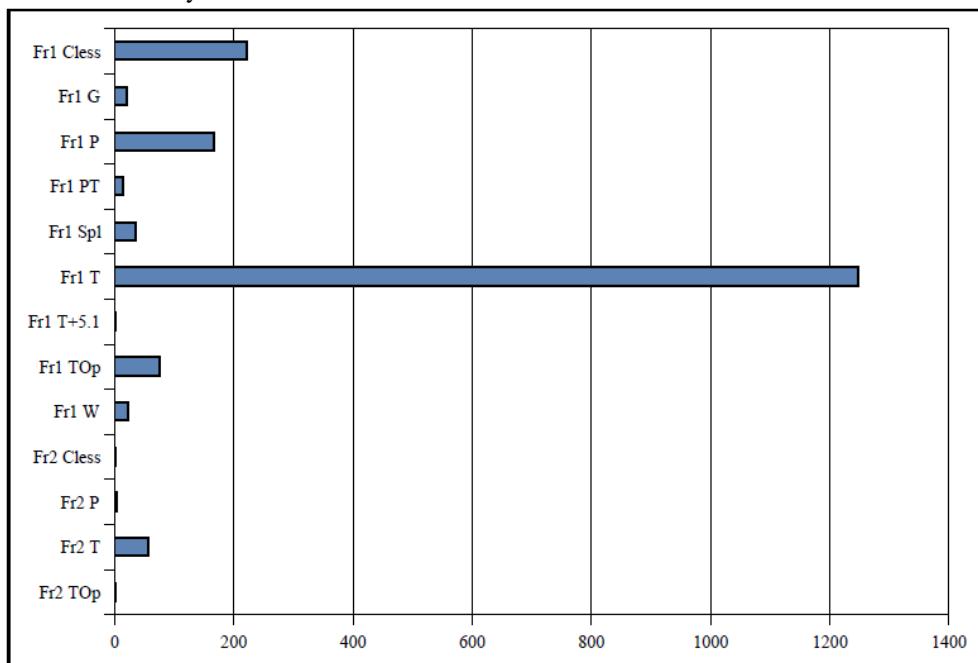
¹ This article is part of the Iranian-Italian ADAMJI project (Archaeological Digital Archive for the Masjid-i Jum'a of Isfahan, 2003-2010), jointly directed by Prof. Bruno Genito and Dr. Faribah Saiedi Anaraki, to whom go my sincere thanks. I wish also to express my thanks to the Italian and Iranian institutions which made possible the project: IsIAO (Istituto Italiano per l'Africa e l'Oriente, former IsMEO) and its President Prof. Gherardo Gnoli; ICHHTO (Iran's Cultural Heritage, Handicrafts and Tourism Organization) and its Presidents during these years, Mohammad Reza Beheshti, Hossein Marashi, Esfandyar Rahim Mashai, Taha Hashemi, Hamid Bagaei; the Embassy of Italy in Iran and Ambassadors Riccardo Sessa and Roberto Toscano, who have given their strong contribution to the initial phase of the project and to its realization, and finally Alberto Bradanini. Thanks are due also to Ahmad Mirza Kuchak Khoshnevis, the present Director of the ICHHTO Research Centre (ICAR), and to Arash Laskhkari; to the different directors of the ICHHTO of Isfahan, Syfolah Aminian, Hosein Ali Vakil Ali Abadi, Said Baktosh, Hasan Ravanfar, Ahmad Aminpur, Esfandyar Heydaripur; to the Ministero degli Affari Esteri, the Direzione Generale per la Promozione e le Relazioni Culturali Ufficio I; to the University of Naples "L'Orientale" and its Chancellors, the late Mario Agrimi, Pasquale Ciriello, Lida Viganoni; to the directors of the Dipartimento di Studi Asiatici, Alberto Ventura, Francesco Sferra and their staff. I also take this opportunity to express my warmest gratitude to Maria Vittoria Fontana, who personally excavated the Southern domed hall of the Great Mosque of Isfahan under study in this article, for her generosity and helpfulness.

² See Genito - Saiedi Anaraki (2010) for description and bibliography of the ADAMJI project and of the earlier restoration and archaeological works done in the Great Mosque of Isfahan.

³ Some preliminary consideration on part of this assemblage have been published in Rugiadi 2010, where excavations methods and stratigraphy are described (Rugiadi 2010, 176). The following stratigraphic levels are examined in this article: 190 (?) cavo fondazione; 190 buca colonna II; 190 buca colonna II sezione N; 190 buca colonna II sezione N; 190 buca L1; 190 buca L1 sezioni; 190 Ic cavo fondazione; 190.12 N Ic cavo fondazione; 190.12 NW Ic cavo fondazione; 190.12 SW cavo fondazione; 190.5 Ic cavo fondazione; 190.5 S Ic (cavo fondazione, buca A); 190.5 S Ic cavo fondazione; 190.5 S Ic dal cavo fondazione; 190.7 SE Ic cavo fondazione; 190.7 SE Ic cavo fondazione; 190.9 cavo fondazione (mihrab); 190.9 S cavo fondazione; 190.9 S cavo fondazione (mihrab). The assemblage presented in Rugiadi 2010 has been increased here with more stratigraphic units: these are the two trenches corresponding to the Abbasid pillars of the hypostyle mosque II and L1, cut to create the empty area for the domed hall (see Scerrato [1976, 595, fig. 11] for an interpretation of these trenches as evidences of an earlier planning of an un-built, smaller dome).

⁴ Blair 1991, 67-72.

The ceramic wares represented in these dated contexts are representative of a turning point in the production of Iranian pottery of the Islamic period, the last quarter of the 11th century, characterized by the appearance of new technologies, new shapes, and of new trends in the decorative style. Beside the various earthenware glazed wares (monochrome green and brown wares, slipped and splashed wares, *graffita* and splashed wares, opaque turquoise wares, and opaque white and transparent colourless glazed wares of the so-called Samarra horizon), a large percentage of siliceous-paste wares is attested (the 30% of the glazed assemblage, i.e. 1867 fragments; tab. 1). The siliceous wares bear transparent glazes (turquoise, purple, colourless, green) or opacified glazes (white, turquoise), sometimes combined among them or with sparse splashes; if decorated, the objects show different kind of incisions and digitations; rims are often decorated (notched, laced, lobated, undulated: Rugiadi 2010, 182, fn. 28). This evidence represents the earliest and most reliable proof for siliceous-paste being produced in Iran already in the second half, or at latest the last quarter, of the 11th century.



Tab. 1: Amount of siliceous wares fragments in the foundation trenches of the Southern domed hall of the Great Mosque of Isfahan.

Key to the table:

Fr1: siliceous-paste 1 (very hard to hard siliceous body, with very small, almost not apparent, grain size, and white to pinkish white to grey white colour; Rugiadi 2010, 178); **Fr2:** siliceous-paste 2 (medium hard siliceous body, with very slightly larger, but still small, grain size, and whitish to white yellow to white pink colour; Rugiadi 2010, 178); **Cless:** transparent colourless glaze; **G:** transparent green glaze; **P:** transparent purple glaze; **PT:** transparent purple glaze and transparent turquoise glaze (on the two sides of the objects); **Spl:** transparent colourless glaze with sparse splashes; **T:** transparent turquoise glaze; **T+5.1:** transparent turquoise glaze attached to a fragment of unglazed pottery (fabric 5.1, fn. 5); **Top:** opacified turquoise glaze; **W:** opacified white glaze.

At least three fragments of siliceous-paste found in the foundation trenches of the Great Mosque might support the theory of a local production, being wasters or second-rate objects: two are fragments of transparent turquoise glazed objects which stuck together during firing, the third is a fragment of a transparent turquoise glazed object stuck together with an unglazed vessel, probably a saggar.⁵ Even though these fragments are not unequivocally wasters, the hypothesis of a local production, which would need the evidence of archaeometrical analyses to be conclusively proven, is supported by several circumstantial evidences. Among these is the high percentage of siliceous-paste fragments in such an early dated assemblage, as well as the variety of forms of the siliceous wares (about 68 forms are recorded). Moreover, the fabric of the unglazed fragment is well attested in the Great Mosque of Isfahan, also for several kiln furniture finds. Twelve small tripods (supported by small upright feet; average dimensions: length of each horizontal foot 3 cm, thickness 1.2-1.8 cm; fig. 2) and one small cylindrical bar made of this fabric were found in the dated assemblage under discussion.⁶

Siliceous-paste pottery (also referred to as fritware, stoneware, faience, quartz pottery, etc., or termed with specific names for more circumscribed productions or techniques, such as "Seljuk white ware"⁷), always glazed, is characterized by its body composition, made of a high percentage of ground quartz, mixed together with some fine clay and possibly glass frit or glass fragments,⁸ in variable proportions. Archaeometrical analyses, ethnoarchaeological researches and historical sources all confirm, with few variations, the employ of such a mixture.

This highly complex technology is peculiar of Islamic pottery productions, and both its origin and its development, which cover a wide geographical and chronological interval, need further investigation, especially as far as concerns production centres, chronology and techniques. The chronological and technical issues connected with the emergence of siliceous-paste concern especially, beside Iran, also Egypt and Syria. Since the earliest studies, the art historian approach had based the understanding of these productions on a certain number of artefacts from Iran, all dated by inscriptions in the last quarter of the 12th century (the earliest being a lustre ware vase in the British Museum, dated *muī'arram* 575/June 1179).⁹ An undocumented movement of potters subsequent to historical events of

⁵ The body clay of the unglazed fragment (classified as 5.1, see also fn. 7) is sparsely micaceous, quite compact, with neat fracture; colour very pale brown (10 YR 7/4), sparse and very small inclusions mostly white angular and brown bladed. The siliceous-paste fragments are classified as Fr1T (see key to tab. 1). All the fragments belong to open forms, probably bowls. The provenances of these three fragments are: 190.9 S cavo fondazione (mihrab); 190 buca L1.

⁶ Fabric 5.1 (fn. 6) was thus most probably of local production. The tripods of fabric 5.1 from the foundation trenches come from the following stratigraphic contexts: 190 buca L1 (11 tripods, of which 4 with traces of transparent glaze, 2 ochre and 2 brown or purple), 190 buca L1 sezioni (1 tripod), 190.9 Sud cavo fondazione (1 tripod). The assemblage from the foundation trenches includes also one tripod of a similar but finer fabric (unglazed fabric 5.2) and one tripod of a coarser fabric (unglazed fabric 1.1). A program of archaeometrical analyses is highly needed and will be soon undertaken.

⁷ We use the term "siliceous-paste" as it is more comprehensive than "fritware"; *contra* Rugiadi 2010.

⁸ Mason - Tite (1994, 77) prefer the use of "glass fragments" rather than glass frit.

⁹ Watson (1985, 67, 80, 84, 108-109), with previous literature. For the earliest dated object (British Museum, no. inv. 1920, 2-26, 1) see Watson (1985, 80, 197, pl. 37).

1168 (namely, the theory that Egyptian potters, who had first developed this technique, left Fustat in 1168, after years of famine which ended in a fire of their quarter), was also taken as support for attributing the emergence of siliceous-paste pottery to the late 12th century. However, the dated objects on which this chronology is built are lustre wares, which already might represent, as we will see, a development of the early siliceous-paste productions and are never found in the archaeological contexts where siliceous-paste is first encountered. More recently archaeological and archaeometrical investigations have conclusively modified the art historian approach, anticipating to the 11th century the emergence of siliceous-paste in Egypt and Syria. In Egypt, archaeometrical analysis helped identifying possible experimental stages in fragments dating back to the 10th and 11th centuries;¹⁰ in Syria, archaeological investigations supported by archaeometrical analyses found evidence to date the productions as early as the second half of the 11th century.¹¹

As for Iran, in most of the excavated sites archaeologists have followed the late chronology of art historians, thus dating the introduction of siliceous-paste pottery not earlier than the 12th or even the second half of the 12th century. For example, siliceous-paste fragments were found at Siraf in an 11th-13th century level, but Whitehouse and Tampoe prefer to postpone the chronology of the whole level to the 12th century onwards because of their presence;¹² at Gurgan, where large assemblages of objects were found, no archaeological data is employed to date the material.¹³ Since the specialist literature is lacking publications reporting archaeological data, even the most recent studies base their dating on the comparison with previously published material attributed to the 12th century.¹⁴

This chronological attribution has lasted despite other archaeological investigations in the Iranian regions had yielded some earlier evidences as regards the beginning of the siliceous wares productions (already before the firm evidence from the Great Mosque of Isfahan). Fragments were found in Khorasan at Nishapur in contexts attributed, on the basis of numismatic evidence and historical information, from the second half of the 11th to the 12th century.¹⁵ At the sites of Lashkari Bazar and Bust in the Afghan Sistan the archaeological evidence might indicate a chronology in the second half of the 11th century, at least for the monochrome turquoise siliceous ware, even if Gardin seems more

¹⁰ Mason 1997b.

¹¹ See Tonghini (1998, 40), with previous references. No early experimental phases were yet identified on Syrian siliceous-paste.

¹² Whitehouse 1970, 6-8; 1971, 12; Tampoe 1989, 80.

¹³ Kiani 1984.

¹⁴ This seems to be the case, for example, of Hulbuk - despite the acknowledgement that siliceous-paste wares have been introduced since the 11th century (see below; Siméon 2009, 134, 174) - and of Termez (Houal, thesis in progress, mentioned in Siméon 2009, 134).

¹⁵ The coins found in the same contexts are dated from 1030 to 1074; «it seems likely that the alkaline-glazed ware [i.e. siliceous paste] was made there [at Nishapur] in the latter part of the eleventh century and throughout the twelfth» (Wilkinson 1973, 259, 263).

comfortable with an attribution in the 12th century;¹⁶ similarly at Siraf, as mentioned above, siliceous wares are found in a level of the 11th to the 14th century (fn. 13).

On the other hand, in Iran and Central Asia siliceous wares are not found in sites which pre-date the 11th century. No fragments were found at Susa.¹⁷ At Sirjan, capital of the Kirman province in the late 9th and 10th centuries and apparently in ruin by the last quarter of the 11th century, only one fragment from the top-soil was recovered in the six trenches investigated by Williamson, which yielded pottery from roughly 950 to 1050; other fragments were found on surface in areas of the city which were not abandoned in the 11th century.¹⁸ In the urban and palatine site of Hulbuk (Uzbekistan) the nearly absence of siliceous wares in all the larger assemblages was an evidence that most of the site was abandoned before their introduction in the second half or in the late 11th century; of the four fragments which came to light, two might be dated on the basis of archaeological evidences and are attributed to the second half of the 11th century.¹⁹

A study of siliceous-paste lustre wares by Robert Mason, based on archaeometrical analyses of excavated fragments and on morphological-stylistic data of also unattributed whole vessels anticipates the appearance of siliceous wares in Iran at about 1100.²⁰ Mason's chronology is built on that of his Egyptian Group Two, mainly for morphological and technological similarities observed in the bowls of the two productions; while the Egyptian group is dated 1025-1075 for comparisons with archaeologically dated finds,²¹ the Iranian siliceous-paste lustre production is postponed to about 1100, because of a «discernible difference [...] indicating a possible gap» with the Egyptian group and because of similarities (some forms and motifs, and the presence of alkali glazes) with the earliest

¹⁶ Gardin 1963, 126-131, «céramique glacée sur cru». Among the siliceous wares found in the two sites «bols bleu-vert pâle, décor gravé; coupes ou bols blancs, trainées bleu-cobalt; tasses et coupes monochromes; grandes coupes sur piédouche annulaire» only the dating of the few monochrome turquoise fragments found is based on archaeological evidences, the remnant being based on comparisons with Syrian wares with no archaeological evidence. Their chronology at Lashkari Bazar must post-date the abandonment of the bazaar in about 1030 (end of Maï müd's reign; numismatic evidence), because no siliceous-paste fragments were recovered from that area. In the kilns at Bust only few fragments of monochrome turquoise ("série 3") were found, mixed with other glazed wares which are considered to be slightly earlier because recovered in the bazaar area also (Gardin 1963, 131). Elsewhere all the siliceous wares are attributed from the 12th century (first half of the 12th century: monochrome turquoise, second half: all the other wares; Gardin 1963, 136-138).

¹⁷ Rosen-Ayalon 1974, Kervran 1977, Hardy-Guilbert 1984.

¹⁸ Morgan - Leatherby 1987, 39, 53, 32, respectively.

¹⁹ Siméon 2009, 133-134. One of the two fragments (from the "badrab 2") is associated to ceramics dated broadly to the 10th and 11th century (wares G8c and G9, Siméon 2009, 133, 173); the other fragment (from the "pièce 11") is related to the second palace, rebuilt at the end of the 10th or in the early 11th century (Siméon 2009, 133).

²⁰ Mason 1997a, 115. «The corpus of pottery assembled for this study consist of sherds from excavations and surface collections, and unattributed but diagnostic whole vessels»; «[...] the bulk of the materials available for study of the Iranian wares comprise whole vessels with no information regarding their origin. [...] For the analytical study, samples were available from excavations at Rayy, Siraf, Ghubeyra, Gurgan and Ani» (Mason 1997a, 108, 111).

²¹ Mason 1997b, 222-223. The most significant comparisons for the dating are made with the pottery from the Serçe Limani shipwreck and the *bacini* from Pisa.

Syrian production, dated to 1075-1100 on the basis of archaeological evidences and parallels with the Egyptian sequence.²²

The archaeological evidence from the Great Mosque of Isfahan anticipates to the last quarter of the 11th century at latest the introduction of siliceous-paste in Iran, and suggests the likelihood of a local production in Isfahan since this early period. Moreover, the absence of lustre wares in this assemblage might be relevant to the emergence of siliceous wares in Iran, as it might suggest that the emergence of lustre wares is not necessarily linked to that of monochrome siliceous wares.

While dealing with monochrome siliceous wares, Mason notes, besides a close similarity of forms with the lustre wares, also new/different shapes, which lead him to think of «different sites of manufacture, a hypothesis confirmed in at least one case by petrographic analysis».²³ The suggestion that the emergence of lustre and of monochrome siliceous wares are not necessarily related has also been expressed by Oliver Watson and Peter Morgan. Following the previous statement of Arthur Lane, Watson considers the monochrome wares as being the earliest siliceous-paste wares produced in Iran, as «close copies of the Chinese originals», then modified according to the “Persian taste” with «stained blue, turquoise, green or purple” glazes, and with carved patterns. Most significantly, he notes that lustre wares “do not appear on shapes closely related to the Chinese, nor on the hard, dense frit bodies with which these shapes are associated».²⁴ Morgan argues for an independent tradition of siliceous-paste in Iran, which could have been developed autonomously from Egypt; to support his theory he employs the evidence of the earliest dated siliceous ware object, a monochrome bottle whose date (534/1139-40) is already too late for a discussion on the emergence of siliceous wares, and a historical source suggesting a link with the production of opaque white glass in Fars in the 10th century.²⁵

No archaeological evidence exists up to now that might suggest that lustre was the first siliceous-paste production to be set in Iran; in fact all the evidences point toward other wares, monochrome plain or decorated ones (incised, carved), as the earliest to be encountered in stratigraphic contexts (in Isfahan, Siraf, Nishapur, Lashkari Bazar). Despite the many variables that might cause this absence of lustre among the earliest siliceous wares to be found in excavations (as their easily perishable decoration, the likely smaller extent of production, etc., see below), there are some evidences, especially as regards the morphology, that suggest that it is significant and chronologically relevant indeed. What the

²² Mason 1997a, 111. The comparisons with the siliceous-paste productions of Egypt and Syria and the absence of experimental phases identified so far in Iran, eventually lead Mason to consider a movement of Egyptian potters to Iran via Syria (Mason 1997a, 115, 117).

²³ Mason 1997a, 116.

²⁴ Watson 1985, 23-24. This is also true for enamel - and underglaze - painted wares.

²⁵ Morgan 1994, cat. no. 148: this is a monochrome painted bottle with relief moulded decoration in figural medallions. The inscription mentions the name of the artisan, “Ali Buhūnī” (Buhūn is an unknown location; Morgan 1994, 155). A proto-stoneware body developed in Iraq in the 10th century, which was identified by Mason and Keall (Mason - Keall 1999, 139-140), or other similar technological innovations could have played a role in the independent development of siliceous-paste in Iran.

Isfahan assemblage might suggest, supported by its large amount, morphological variety²⁶ and precise dating, is that at least in Isfahan lustre was not among the first productions of siliceous wares. To further support this hypothesis, however, its absence needs to be considered critically: is it possible that this assemblage from the Great Mosque includes fragments that have lost their lustre-painted decoration?

The question of the perishable attribute of lustre needs a technical evaluation. The lustre painted decoration is applied on the hard glaze after its first firing, and becomes attached to it during a final firing in reducing atmosphere when the glaze softens again. Frank Hamer explains that this procedure creates a joint glaze/lustre interface (about 35 nanometres thick, i.e. 35 millionth of a millimetre), which is stronger than the lustre layer itself (about ten micrometre, i.e. one hundredth of a millimetre); while the lustre layer (especially if made of metals only) is easily attacked by acids and abraded, «the volatilisation of the silver and copper [...] eventually caused by reaching the metals' boiling points] will never starve the pigment completely» being the glaze/lustre interface much stronger.²⁷ Actually, observing the surface of lustre painted objects it is often possible to discern the spots where the lustre has vanished: this was never the case of the fragments of our assemblage, even if part of it has been burnt and shows traces of firing.²⁸

Taking into consideration the glazes and the shapes associated with the earliest Iranian lustre wares, most of the fragments in our assemblage does not share their features. There are no fragments with the most common coatings indicated for the earliest Iranian lustre wares (opaque white combined with transparent colourless glaze, or transparent colourless combined with transparent blue glaze).²⁹ There are, however, several fragments with an opaque white glaze (22 fragments) or with a colourless glaze (222 fragments), also indicated as common coatings for the earliest lustre wares (fn. 30), but only few of their shapes have parallels in the early lustres from Iran.

In our assemblage the shapes which have been identified among the opaque white glaze fragments are shown in table 2; the last column of the table reports the parallels which have been found with forms of the earliest lustre wares. Since the lack of archaeological findings of lustre wares and of archaeological evidence to date them, comparisons have been searched for within the main publications of the scholars who have investigated the chronology of lustre wares - Oliver Watson, Peter Morgan, and Robert Mason³⁰ - and following their internal chronology (only their earliest groups have been taken into account, i.e. Watson's Monumental and Miniature Style, Morgan's Kashan lustre Phase One and Two, Mason's Group One Egyptianized). The difficulties in using these and other

²⁶ See Rugiadi (2010, figs. 4-10) for the morphology of part of the assemblage (cf. fn. 3).

²⁷ In Caiger-Smith 1985, 225, 233, 235. Watson (1985, 31) speaks of a layer of 1 micron. See also Keblow Bernsted 2003, 8-11.

²⁸ Rugiadi 2010, 176 and fn. 13.

²⁹ Morgan 1994, 162-163. See also Watson (1985, 52, 69) and Mason (1997a, 112), even if the characteristics of the glazes is not systematically indicated for each of their groups; Mason considers them irrelevant since more glaze technologies might be encountered on the same object (1997a, 112); Kiani does not mention them (Kiani 1984). The transparent colourless glaze is mentioned only by Mason (1997a, 163) and Keblow Bernsted (2003, 8) among the glazing options for Iranian lustre.

³⁰ Watson 1985; Morgan 1994; Mason 1997a.

publications for morphological comparisons have been discussed by Mason³¹ - our attempt based on an archaeological assemblage only shows how much required such information are (for example, data on the frequency or the forms of lustre wares are not shown in relation to their glaze).

form	description of form ³²	no. ³³	dim. cm (fr.) ³⁴	parallels
0015	Fragment [of bowl] with lotus shaped body	1		prob. Watson 1985, fig. 36
2144.a (fig. 4)	Fragment of dish, rounded carinated profile, wide rim (with vertical edge) slanting towards the interior	1	Ø max 8	
3012 B4.a (fig. 3)	Bowl, oblique profile, decorated rim (notched), ring foot with lowered bottom	1	h 2.5, Ø base 4 ca., Ø rim 7	
3220	Fragment of deep bowl/cup, almost vertical profile, slightly everted rim	1	Ø 14	
4010	Fragments of bowl, rounded profile, simple rim	2	Ø 11 (<i>I</i>)	
4020	Fragment of bowl, rounded profile, slightly everted rim	1	Ø 9	Watson 1985, fig. 2; Morgan 1994, n. 256
4521.b	Fragment of cup, with tapered slightly inverted rim	1	Ø 5	
B2	Disc base	1	Ø 3.5	
B3	Ring foot	3	Ø 6, 8 (2)	
B6	Ring foot resting on inner corner	1	Ø 10	
walls		9		

Tab. 2: Siliceous-paste fragments with opaque white glaze from the foundation trenches of the Southern domed hall of the Great Mosque of Isfahan: identified shapes.

As for the 222 fragments with transparent colourless glaze, their number accounts to about the 11% of this siliceous-paste assemblage; seven fragments bear incised or carved decoration and thus are less likely to have been lustre-painted; the shapes which have been identified are illustrated in table 3.

³¹ Mason 1997c, 131-132. Mason's article on Iranian lustre wares (1997a) provides drawings only of dishes and bowls.

³² In italics in brackets is the number of fragments if more than 1.

³³ Number of fragments.

³⁴ The dimensions are in centimeters, and concern only 1 fragment unless stated differently in italics in brackets (if the number of fragments is more than 1).

form	description of form	no.	dim. cm (fr.)	parallels
0044	Fragment [of dish?], oblique profile, wide rim with vertical edge and slanting towards the interior (prob. belonging to 2144)	1	Ø 18	
3010	Fragment of bowl, oblique profile, simple rim	3	Ø 13? (2), 16? (1)	Morgan 1994, n. 257; Mason 1997a, fig. 6 MMA.47
3011	Fragment of bowl, oblique profile, tapered rim	1		
3212	Fragment of deep bowl/cup, oblique profile, decorated rim (laced), digitated circles and carved horizontal line on exterior	1		
3215	Fragments of deep bowl/cup, lobated rim and upper part of the body (h 3.5 cm), vertical lower part of profile	3		
3220	Fragment of deep bowl/cup, almost vertical profile, slightly everted rim; horizontal groove below the rim on exterior	1		
3221	Fragment of deep bowl/cup, almost vertical profile, slightly everted and tapered rim; digitated circles on exterior	1	Ø 15	
3320	Fragment of deep bowl/cup, with almost vertical carinated profile with wide vertical impressions, slightly everted rim	1	Ø 12	
4010	Fragment of bowl, rounded profile, simple rim	8	Ø 13 (2), 14, 15, 17 (2), 20, 22	
4010.c	Fragment of bowl, rounded profile, simple rim	1		
4011	Fragment of bowl, rounded profile, tapered rim	6	Ø 10, 13 (2), 14 (2)	
4020	Fragment of bowl, rounded profile, slightly everted rim	11	Ø 11, 12 (2), 13 (3), 14, 15, 16, 18	Watson 1985, fig. 2; Morgan 1994, n. 258
4020.b	Fragment of bowl, rounded profile, very slightly everted rim	1	Ø 12	Watson 1985, fig. 2; Morgan 1994, n. 258
4030	Fragment of bowl, rounded profile, everted rim	1	Ø 19	Morgan 1994, n. 258
4220.a	Fragment of deep bowl/cup, rounded profile, slightly everted rim	2	Ø 10, ca. 11?	Morgan 1994, n. 265
4260	Fragment of very small bowl, rounded profile, inverted rim. Splashes on exterior (1)	4	Ø 7	
6030	Fragment of pot, rounded shoulder, everted rim	2	Ø 4.5, 5	
B1	Flat base	1		
B3	Ring foot	7	5 (2), 6, 7 (2), 8 (3), 9	
B6	Ring foot resting on inner corner	2	Ø 7 (2)	
B6	Ring foot resting on inner corner; prob. all open forms	8	Ø 5, 6, 7 (2), 11	
LZ200	Fragment of lamp, flat base with open pinched reservoir (no stem); horizontal incisions inside, turquoise "splash"	1		

form	description of form	no.	dim. cm (fr.)	parallels
	outside			
walls	Digitated or honeycombed body (2); digitated round body (1); incised decoration on interior (4); lotus shaped upper body and rim (1); body prob. of 3200 with lotus shaped rim (1); body prob. pertaining to II.4116 (cfr. inv. 3335) (1)	159		
handles	Long vertical handles, ribbon-shaped, with two parallel vertical carvings (2)	2		

Tab. 3: Siliceous-paste fragments with transparent colourless glaze from the foundation trenches of the Southern domed hall of the Great Mosque of Isfahan: identified shapes.

As with the opaque white fragments, the shapes of the colourless glazed siliceous wares of Isfahan have only few parallels with lustre wares shapes documented in the literature. The exceptions, beside one fragment of a lotus shaped bowl (0015), are the simplest shapes of bowls (simple rim, oblique profile: 3010; slightly everted or everted rim, rounded profile: 4020, 4030) or deep bowls/cups (slightly everted rim, rounded profile: 4220.a), that can hardly be taken as pinpointing of any type of siliceous ware. While it might be argued that at least some of these might have been lustre painted, the much larger variety of forms is not documented in the literature for the earliest lustre wares, but it is attested for the other siliceous wares found in the assemblage.³⁵

In conclusion, the dated assemblage from the foundation trenches of the Great Mosque of Isfahan shows that by 1086 the production of siliceous wares in Isfahan was well established; it points to Isfahan as a production centre for glazed pottery, most probably for siliceous wares as well; finally, it does not seem to support the hypothesis of lustre as being the earliest production of siliceous wares to be set in Isfahan, while attesting that monochrome siliceous wares were already fully developed.

³⁵ See the partial assemblage published in Rugiadi 2010, figs. 4, 7-10.

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Fig. 1: The Southern domed hall of the Great Mosque of Isfahan during the excavations in 1977: the foundation trenches are visible along the perimeter of the hall (photo IsIAO Dep. CS 1977).



Fig. 2: Tripod fragments with traces of glaze from the foundation trenches of the Southern domed hall of the Great Mosque of Isfahan (from M.J. 190 buca L1; photo Rugiadi 2010).



M.J. inv. 2053



M.J. inv. 2053

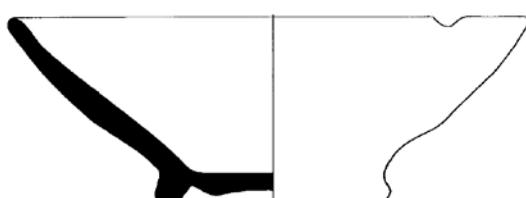


Fig. 3: Small siliceous-paste bowl with opacified white glaze from the foundation trenches of the Southern domed hall of the Great Mosque of Isfahan (inventory no. 2053, sag. 1372; from M.J. 190 buca L1; photo and drawing D. Rosati).



M.J. inv. 2054

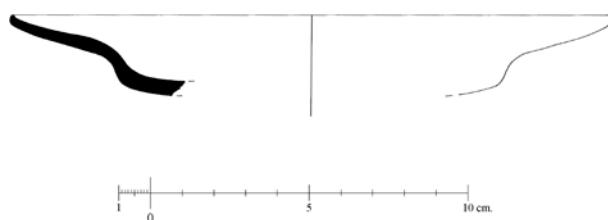


Fig. 4: Fragment of siliceous-paste dish with opacified white glaze from the foundation trenches of the Southern domed hall of the Great Mosque of Isfahan (inventory no. 2054, sag. 1371; from M.J. 190 buca L2; photo of exterior and drawing D. Rosati).