

Electric Firing


Creative
Techniques



Ceramic
Arts
Handbook
Series



Edited by Anderson Turner



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The American Ceramic Society
600 N. Cleveland Ave., Suite 210
Westerville, Ohio 43082

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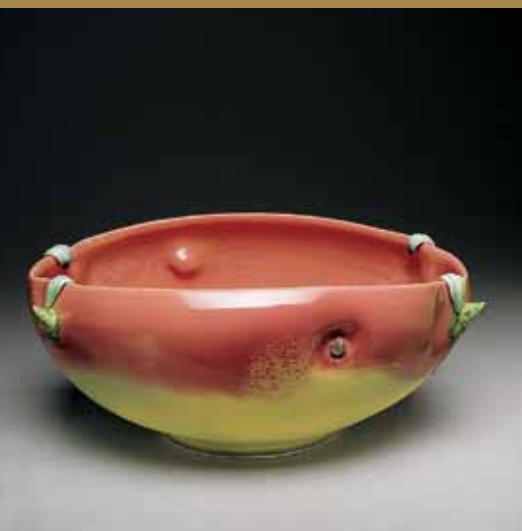
Cover Images: "Spaghetti Jar" by Richard Busch; (top right) "Alligator Plate" by Jayne Shatz; (bottom right) "Birds and Bones" by Kelly King.

Frontispiece: Stoneware platter by Daryn Lowman

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Preface

Electric kilns are a wonderful thing! They're so readily available and relatively simple to install that any artist can take advantage of the incredible potential this tool has to offer. Nearly every ceramic artist I know uses an electric kiln to some extent in their studio to assist them in creating work. They appreciate the control and dependability this type of firing offers in helping them to achieve their desired results.

As the popularity of electric kilns increased within the past few years, studio potters and manufacturers made this tool even more versatile. Here are a few examples of what has been happening:

Electronic controllers: If you don't have one get one. Case closed. Electric firing is about consistency and control and these devices take that advantage much further. They work extremely well and also save energy. Crystalline glazes for example were once the domain of a select few, but now they are simple because of these devices.

Refractory coatings: ITC, a refractory coating material, can be applied to elements and the insides of kilns to give electric kilns even better durability and economy. ITC coated elements can last many times longer and they can withstand reduction firing. I coated the inside of one of my Skutt kilns 10 years ago and it's still going! And Nils Lou, author of *The Art of Firing*, has done hundreds of firings using a simple bunsen burner under his ITC-coated electric kiln. It works and it works well.

Materials and products: Manufacturers now produce literally thousands of products developed for use in electric kilns. Prepared clays and glazes for all firing temperatures and tastes make it possible to get most any type ceramic body with your choice of color or glaze effect.

In this book we've included information on all these topics and more. Further, we've also included some inspirational stories from artists who are pushing the envelope on how to use readily available materials.

By bringing technical sophistication to the masses, the electric kiln has opened a window to creativity and innovation from unexpected sources and has led to the "democratization" of the ceramic medium. I hope you'll find this book informative and inspiring in your own work.

Anderson Turner

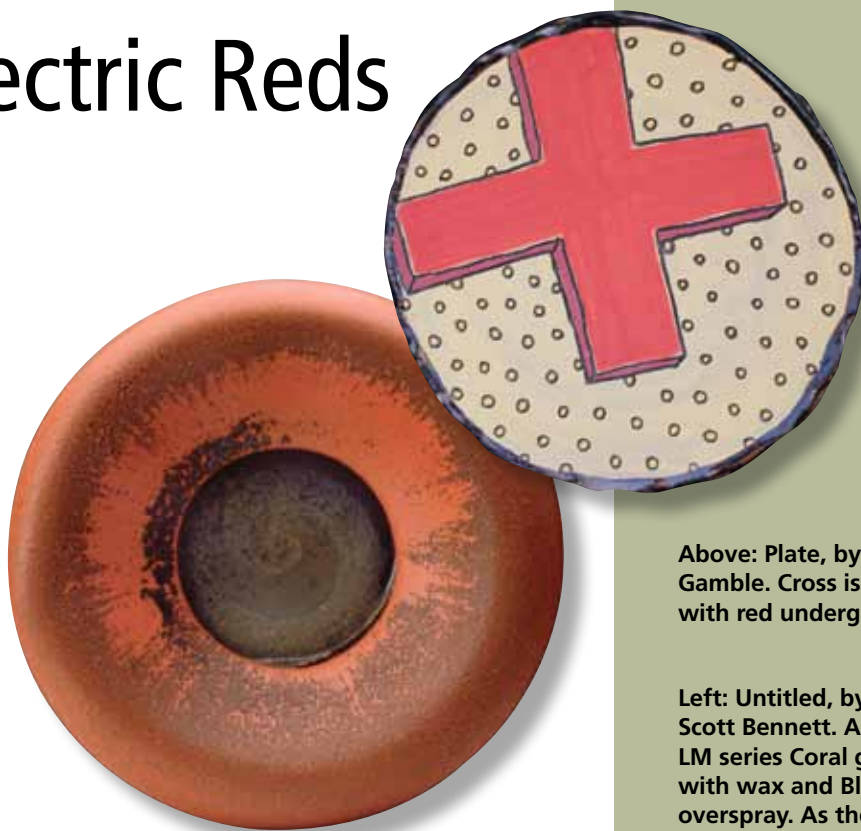
Low-Fire Electric Reds

by David L. Gamble

I'll start by explaining there are two different types of commercial red glazes that I normally use. One type is an extremely bright color and harder to achieve and the other is a newer tomato red color that is AP (Approved Product of the Arts and Creative Materials Institute) nontoxic and dinnerware safe. The latter is formulated with inclusion stains, which are continuing to be improved. The color is encased in zircon, which makes them safe to use even in the classroom.

The AP nontoxic reds are extremely stable and were used to create red velvet underglazes that can be fired from cone 05 to as high as cone 10—only salt seems to blush them out.

The success of underglazes has allowed the development of gloss and matt red glazes that have been formulated to work well at the low-fire cone 05 range and other glazes formulated for the cone 4–6 range. These are extremely reliable. Three brushed coats will usually be enough of an application and you get nice tomato color reds at both temperatures.



Above: Plate, by David Gamble. Cross is glazed with red underglaze.

Left: Untitled, by Scott Bennett. Amaco LM series Coral glaze with wax and Black overspray. As the wax melts in the kiln, the black moves.

Bright reds are not dinnerware safe and are extremely sensitive to variations in firing conditions. There have been many times that an art teacher has asked me about the use of these types of red glazes. I understand the space and time challenges that teachers face, but you cannot put these glazes in with your normal glaze firings and expect good results. They are affected by how tight the load is stacked, other glazes (mostly copper greens), and temperature. If you're firing to cone 05, I can almost guarantee there will be problems. The glaze will most likely have variations from clear to gray to black, and if you're lucky, a spot or two of red. Note: Amaco glazes were used in the pieces shown here, however, many companies produce similar glazes.



Platter, by David Gamble, glazed with red glaze and blue brush strokes on top.

Process

Here are my suggestions of what you need to know and do to achieve the bright reds!

Bisque your clay body slowly to cone 04 (12 hours to get all the gases out). Although these glazes are not considered translucent, the clay body color does affect them slightly. White bodies will make the glaze appear brighter in color than darker bodies.

Using a brush, apply the glaze thicker than the normal three coats. Four coats will usually work, but too heavy an application may cause the glaze to run. Glaze application may need experimentation and practice.

Load the kiln very loosely. There is a need for lots of space between the pieces for air circulation. I leave the peephole plugs out during the firing, thus allowing extra oxygen to enter the kiln chamber.



“Redhot Chilli Pepper Diner,” by Jerry Berta. Glazed with red underglazes.

Do not fire above cone 06 (1828°F), preferably using witness cones for observation. I have been firing at cone 07 (1789°F) with great results. These glazes seem to like the cooler temperatures.

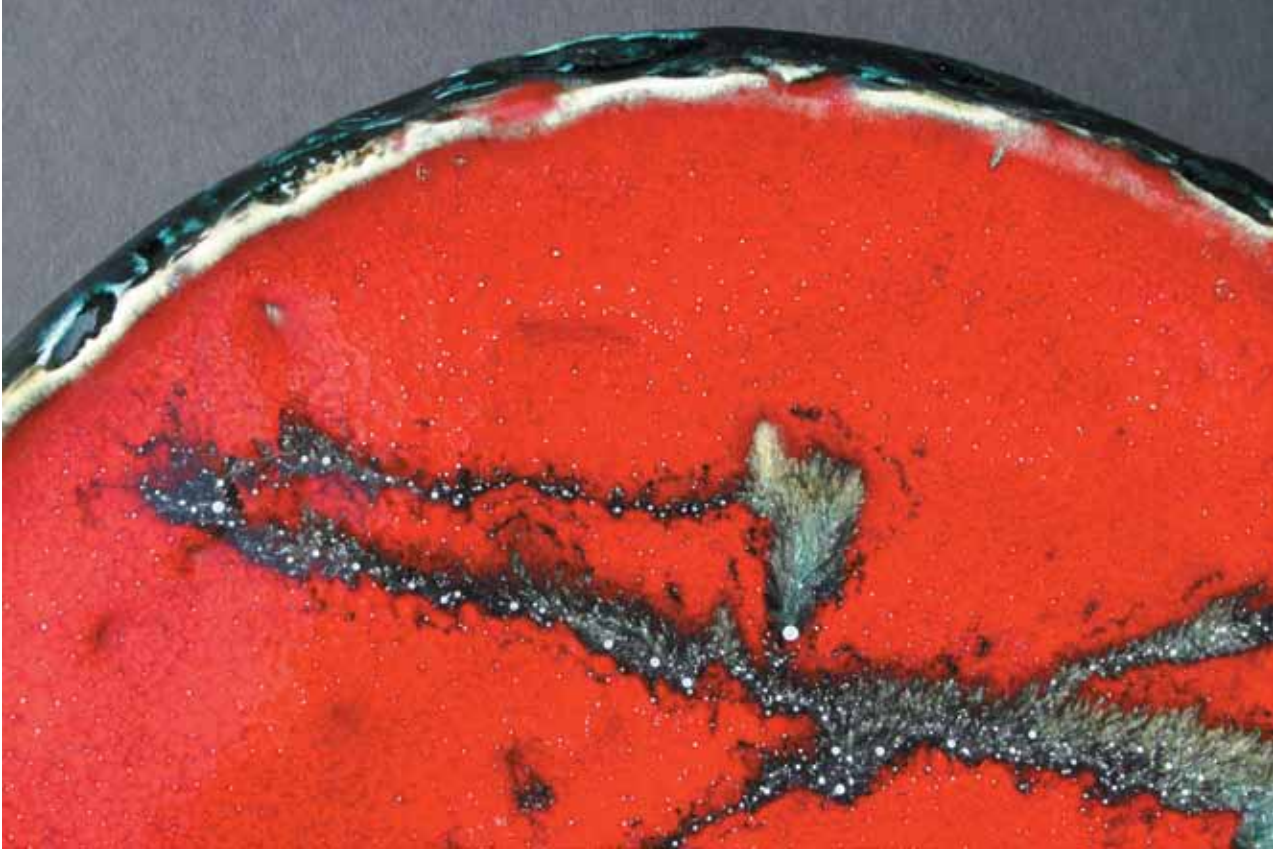
Fire as quickly as you can, four hours is ideal. If your pieces are larger, an example being my 22-inch platters, take them up slowly to about 1200°F. This may help to eliminate cracking problems. Then turn the kiln on high to fast fire to the end of the firing.

More Observations

If your kiln is vented through the bottom with a system that draws air through the top of the kiln, this will help give you more oxygen in the kiln and better red results. Remember that kilns, depending on how they are stacked, may not

fire that evenly. This can cause cold spots and hot spots. There can be a difference in temperature equal to a couple of cones from top to bottom—depending where the kiln sitter or thermocouple is located. This variability can really affect bright red glazes. Newer kilns with zone control and multiple thermocouples tend to fire more evenly. If you have an older kiln, place cones in the top, middle and bottom of the kiln so you can keep a record of what happens in the firing. They can help provide answers if problems do occur.

Now that you know the process, I will describe my experimentation with red glazes. I’ve been placing them on different color clay bodies, layering over glazed fired pieces and layering one coat of gold glaze over the top.



Platter, by David Gamble, glazed with red glaze, blue brush strokes and one coat of gold used for accents.

I then place the pieces next to peep holes to brighten the color or place shelves over the edges to deepen and take away the color. This is what is exciting to me—not getting it perfect, but having the surface color change and vary while having some control over what the changes will be. I am an extreme advocate of using commercial glazes the way a painter would use his tubes of paint. Experiment, test to the “max” and

make them your own. Years ago, I was asked to be a glaze doctor at the National Council on Education for the Ceramic Arts (NCECA) in Las Vegas. I agreed, but told them to label me a glaze deviate instead of a glaze doctor.

Don’t be afraid to experiment. Don’t be afraid to sacrifice a few pieces on the way to discovering something more exciting.

Low-Fire Surface Decoration

by Gail Kendall



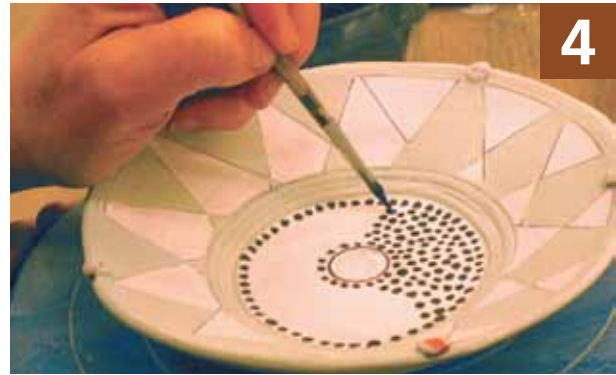
Finished plates,
approximately 8
inches in diameter,
with glazes and lus-
ter, fired to cone 03.

Back in the 1960s, only the low-fire process afforded access to a broad range of saturated colors. With various encapsulated stains that have come onto the market, a whole range of reds and oranges have become reliable at high temperatures. I still work with low-temperature materials for philosophical reasons as much as anything else. My goal is to align my work aesthetically to its peasantware ancestors from Europe and Great Britain. One of the aspects of peasant pots that I love is the casualness of construction and glazing that is common to the finished object. Village potters collecting scant remuneration for their la-

bors could not invest huge amounts of time in their work. It's likely that more basic and less controlled firing technologies also contributed drips, splotches, blurring and other variations that add to the overall feeling of freedom that I admire.

Process

First, greenware is painted with White Slip (figure 1). I use brushes with either coarse or soft bristles, depending on the desired surface texture. Small areas missed are allowed to remain. Next, I draw through the slip on the surface (figure 2). I use a sharp knife to cut through the slip to trace the shape of an edge, or create a design or texture. I also may use sgraffito techniques to texture areas



with a stick or pencil, or draw other patterns onto the surface, revealing the red clay under the slip (figure 3). Once the pot is bisque fired to cone 03, I paint the entire surface with a black underglaze—watered down as much as possible but still opaque when applied. After it dries briefly, I wash it off with clean water and a sponge, retaining the black in the recessed details. I let the piece dry thoroughly and then begin applying fields of small, black underglaze dots (figure 4).

I always use a food safe commercial clear glaze on the interior of all soup tureens and teapots, or any other form that may hold liquid.

Fashionable or not, I am pleased with my work when it displays a lustrous gloss of just the right thickness and juiciness.

I apply four or five coats of Gerstley Borate Base Glaze in the remaining unglazed areas (figure 5). I enjoy the subtlety of commercial gloss next to my own gloss glazes, which have a softer appearance. I then fire these pieces to cone 03. After the work comes out of the glaze firing, I may add some 24K burnished gold luster to handles, small buttons of clay, or other details (figure 6). This luster is formulated with small amounts of yellow ochre that rises to the surface during the final firing to cone



017. Finally, The luster is then bur-
nished with extra fine steel wool to
reveal the beautiful shine of 24K
gold (figure 7).

The final appearance of any pot
is affected by every stage of the cre-
ation process, beginning with form-
ing. I allow joins, scrapes, scratches
and other imperfections resulting
from handbuilding to remain on the
surface of the finished greenware.

Prior to the bisque firing, I care-
fully brush or smooth away the little
bits of piled up slip that build up on
the surface from the sgraffito tech-
niques. Tiny bits of slip, if allowed
to remain through all the firings,
can become sharp enough to cut or
scratch the user.

In my work, I want to counter the
tendency low-fire gloss glazes to look
like plastic or patent leather. Even
though the surface is shiny, the
transparency of glaze allows one to
see through the layers and down to
the red-brown clay and black stain.
Even the brushstrokes, which some-
times show in certain glaze combi-
nations, add to this feeling of depth.

Recipes

White Slip

Cone 06–10

Feldspar	25.0 %
Ball Clay	25.0
Kaolin	25.0
Silica	25.0
	<hr/>
	100.0 %

This slip is easy to mix, can be applied on green-
ware and bisque, and works from cone 06 to cone
10. The black stain I apply to bisque cleanly wipes
off this slip.

Gerstley Borate Base Glaze

Cone 03

Gerstly Borate	55.0 %
EPK Kaolin	30.0
Silica	15.0
	<hr/>
	100.0 %

Blue

Cobalt Oxide	2.0 %
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Rich Green

Copper Carbonate	6–8.0 %
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Rich Yellow

Rutile	6–8.0 %
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This glaze is a slight variant of a Wayne Higby
1-2-3 raku glaze. I mix up 5-gallon buckets of
clear, Rich Green and RichYellow. I have on hand
½ gallon of Blue. The rest of the colors I use come
from mixing these glazes together: Yellow Green:
three parts Rich Yellow to one part Rich Green.

DaNisha Sculpture

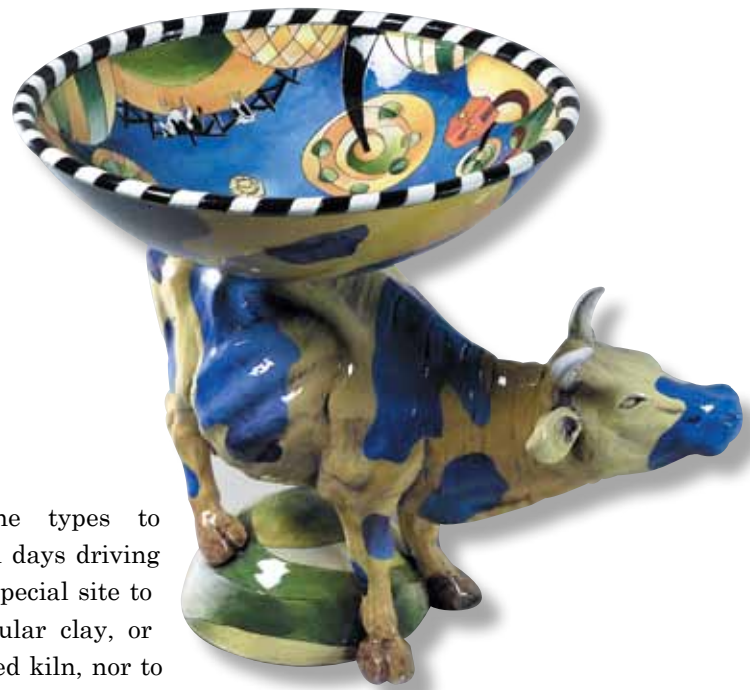
Beauty in Simplicity

by Eleanor Piazza

“Esther,” 11 inches in height, slip-cast earthenware, with underglazes, fired to cone 04.

Not the types to spend days driving to a special site to mine a particular clay, or fan a wood-fired kiln, nor to disrespect those who do, Nisha and Dan Ferguson get right to the heart of their art form: a union of sculpture and painting. Two artists and two art forms integrated in one seamless unit: DaNisha Sculpture. “It is the love of art that excites us: not the process and production, not the clay or the glaze, but the resulting sculpture. We respect process and spend long hours in the details of creation,” declares Dan, “but our passion for what we do lies in the image, in the end result.”

“Our work consists of sculpture, drawing and painting, and design,” Dan tells us. “Over the years we have found ourselves drawn to re-studying and reviewing the fundamental principles of these three things. In fact, we realized that these fundamentals were all the things we ignored or deemed too boring to pay attention to in art school. They are precisely the things the teachers



were trying to impress upon us as the most important.”

Dan creates the base, a sculpture, which supports the bowl, designed and painted by his wife Nisha, partner in both life and art for years. Dan, who apprenticed with Canadian sculptor William McElceran, stresses that “Sculpture doesn’t have to be bronze or stone to be art.” Dan creates the original sculpture from plastelina, and then plaster piece molds are made around the sculpture, and the original model is discarded. The plaster piece molds take much longer to make than the actual sculpture itself. Never one to sacrifice the intricacy of the form for production’s sake, Dan’s molds have anywhere from 12 to 30 pieces. In contrast, most molds for commercial ceramics are composed of only one or two pieces.

“I have learned, and am continuously learning, how to edit the forms of life so as to describe the figure elegantly and without clutter. Real life contains an infinite amount of detail. It is my job to find just the right amount of detail in order to create something beautiful. As in all things, there is beauty in simplicity. This is the art of sculpture. I also am continuously improving the technical side of sculpture: proportion, anatomy and form.”

The base of each sculpture is cast in an edition of 44, but Nisha draws and paints the bowls differently each time. Each sculpture is unique; despite being a number in the edition. They sign each piece individually, Nisha her bowl and Dan his sculpture.

An old warehouse comfortably settled into a hillside overlooking the city of San Miguel de Allende, Mexico, serves as an expansive studio. To wander around this studio, where there is always music playing, is an intoxicating experience. Not often is one surrounded by such an exotic menagerie; animals from zoos, the circus, jungles and the farmer’s field mix it up happily with humans and angels.

Nisha presides over a long, narrow table laden with bowls. Some she has just drawn on and they wait, full of promise, but still nude of color. Some are partially painted, and others, just finished, gleam with fresh underglaze and vitality. She sits easily in a comfortable office chair; necessary due to the long hours she

spends painting and drawing, and has an array of glaze jars around her, in her very own vibrant palette. Her long brush twitches with creative force as she works her way around the belly of a frog, the inside of a bowl full of flowers, or each spot on a cheetah’s coat.

In the “Redondo” edition, three hefty elephants, in magnificent circus harness, steadfastly balance a bowl that spills over with stars and crescents. Overseeing all of this, in bovine benevolence, is good old “Esther” the cow—a force unto herself.

Possessing an intimate relationship with their environment and a keen sensitivity to the immediacy of their surroundings, the Fergusons have developed through various external influences. First, bustling Toronto, where Dan and Nisha met as students at the Central Technical School’s Art Centre in Toronto. Next, the pastoral retreat of their studio in southern Ontario. They moved there soon after graduation, and that is where their first-born son arrived. It was there, in a moment of inspiration that was to become their destiny, that they mounted one of Nisha’s bowls onto one of Dan’s sculpted bases that their collaboration as artists took shape in earnest.

A few years later, the couple returned to Toronto and this time lived in a community, surrounded by other artists, performers and musicians. Nisha’s fascination for the renowned Canadian aerial acrobatic troupe, Cirque de Soleil, spurred by her love



PHOTOS: JUAN DE LA TORRE

"Triple Elephant," 13 inches in height, slip-cast earthenware, with underglazes, fired to cone 04.



"Guardian Angel," 11 inches in height, slip-cast earthenware, with underglazes, fired to cone 04.

of dance and being a practicing gymnast herself, accounts for the circus theme so prevalent in their work. Nisha developed her own trapeze troupe at this time, GravityWorks Canada, whose routines she choreographed and took on the road. They started out in Canada, then travelled to the United States, and eventually to Mexico where she took to the air

in GravityWorks South. This meant that Dan's beloved Esther literally ran away with the circus and joined up with other elephants, zebras, acrobats and camels, which made their way into the work.

The angel, one of the subjects to emerge from the Ferguson's work after moving to Mexico, once again reflects their immersion into, and