

October 2008  
Volume 44 No. 8



# BC POTTERS

*Newsletter of the Potters Guild of British Columbia*

## INSIDE:

Want to keep getting your  
newsletter? **Renew** your  
membership now!

*Canadian Woodfiring* **4**

*Making Clay in Australia* **5**

*Book Review* **7**

*Are you in Business?* **8**

*Techno Tips* **9**

*Pottery Videos Online* **11**



*Horse, by Zhana Nedelcheva. See Page 6.*



## Gallery of BC Ceramics

[www.bcpotters.com](http://www.bcpotters.com)

**Brenda Beaudoin,**  
Gallery Manager  
[galleryofbcceramics@bcpotters.com](mailto:galleryofbcceramics@bcpotters.com)  
604.669.3606



**Hours**  
10 a.m. to 5 p.m.



**Gallery Assistants**  
Anne Moore  
Amanda Sittrop  
Jessica Gilmore-Groome  
[staff@bcpotters.com](mailto:staff@bcpotters.com)



**Gallery Committee**  
Maggi Kneer  
Sheila Morissette  
Pia Sillem  
Jinny Whitehead  
Celia Rice-Jones



*The Gallery of BC Ceramics is a gallery by potters for potters.*

*The Gallery coordinates and curates nine exhibitions a year (artists must apply to be juried, the deadline is September each year), showcases one featured artist monthly—usually an emerging artist—and sells the work of more than 100 artists in the retail shop.*

To download and print a Gallery Jury Application, [click here](#).

For information on Gallery Policy, [click here](#).



## 2008 Featured Artists

The featured artist spot provides an opportunity for one ceramic artist/PGBC member to have a small display of non-juried ceramics for sale at the gallery for the period of one month, one time only. The artist must comply with and sign the Gallery Policy before they can be listed as a featured artist. Sign up for 2008 is complete. The featured artists for this year are:

- **October:** Jackie Frioud
- **November:** Gabrielle Burke

## 2009 PGBC Featured Monthly Artist

*How and who is eligible to become a PGBC Gallery Featured Artist?*

- You must be an individual PGBC member and your membership dues must be paid or the gallery cannot accept your submission.
- A featured artist can be a recent graduate, an emerging, and/or established potter. This is an opportunity for a PGBC member to display non-juried ceramics at the gallery that meet our quality standards and are suitable to this venue. It is also an opportunity to introduce your work to our gallery patrons, develop a new market, or

create and display a new line of your work.

All individual PGBC members are welcome to submit a completed form for the 2009 PGBC Monthly Featured Artist. Deadline for submissions is noon Nov. 17, 2008. Submissions will be drawn at random. All selected featured artists will be contacted via email by Nov 21, 2008. Gallery staff will also include further details on timelines and procedures.

Please mail and /or email ([staff@bcpotters.com](mailto:staff@bcpotters.com)) this completed form. The form can be [downloaded here](#).

## 2008 Gallery Exhibitions

Exhibition Openings/Artists Receptions are on Saturdays from 1 to 3 p.m., the first day of the exhibition. Refreshments served.

**October**  
Second Annual Vancouver  
Collects: Wayne Ngan  
Oct. 4 to 27

**November**  
Meg Ida  
Nov. 1 to 24  
New works

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## President's Message

The warm glow of a September sun signals the end of summer and causes us to think of creating new works for upcoming seasonal sales. It should also remind you that it is time to renew your membership. If you are reading this, and you haven't sent in your dues as yet, please stop what you are doing and send a cheque or pick up the phone and phone it in now!

Just like everyone else, the fall is a busy time for me. However, I still have to squeeze in the guild's fundraising sale at the Lougheed Mall Saturday, Oct. 18 and Sunday, Oct. 19. I still don't have enough volunteers to cover each shift. Please consider giving a few hours of

your time to this event that is very important for the viability of the guild. Also, please consider donating one or two of your seconds to help freshen up the display. Donations can be dropped off at the gallery or, for the Burnaby area, contact Keith-Rice Jones at [keith@wildricestudio.com](mailto:keith@wildricestudio.com), for Tri-cities area contact Faye Oakes at [rickspick@telus.net](mailto:rickspick@telus.net), for North Vancouver contact Maggi Kneer at [maggikneer@telus.net](mailto:maggikneer@telus.net). Thanks. 📧

—Jinny Whitehead

## Gallery News & October 2008 Exhibition *By Brenda Beaudoin*

The Gallery of BC Ceramics proudly presents our 2nd Annual Vancouver Collects exhibition. The goal of Vancouver Collects is to celebrate the fine art of ceramics by getting a glimpse of the personal ceramic collections of well-known Canadian contributors to this very potent art form.

We are greatly honoured that Wayne Ngan will showcase a selection of a dozen ceramic pieces from his own personal collection at the Gallery of BC Ceramics from Oct 4 to 29.

Wayne Ngan is a prolific artist whose contributions and influences are far reaching. He has exhibited extensively and his works are collected internationally. Wayne is also a recipient of numerous awards including the Saidye Bronfman Award in 1983.

*"Ngan's holistic approach to art is neither sought after nor capable of realization by most craftspeople today, but his example has the force and persuasiveness of the committed and productive visionary. Out of this commitment*

*have come works that reassert pottery's fundamental meanings while at the same time they echo some of its great moments in time."*

*Doris Shadbolt, Writer/Curator*

Wayne Ngan's artist reception will be held on Saturday, Oct. 4, 1 to 3 p.m. Public dialogue and participation is welcomed. We hope you join us in this wonderful opportunity to meet and discuss the fine art of ceramics with one of British Columbia's leading ceramic artists. 📧

## September 2008 Opening Reception: KSA Out There



Patrons and artists at the opening reception, hats optional.



Work by Lise Kuhr.



Work by Robin Dupont.



For a review of the show see: [http://ceramics.suite101.com/article.cfm/kootenay\\_school\\_of\\_art\\_at\\_bc\\_gallery\\_of\\_ceramics](http://ceramics.suite101.com/article.cfm/kootenay_school_of_art_at_bc_gallery_of_ceramics)

For a write up on Pamela Nagley Stevenson's work:

[http://ceramics.suite101.com/article.cfm/pamela\\_nagley\\_stevenson\\_with\\_matter\\_that\\_matters](http://ceramics.suite101.com/article.cfm/pamela_nagley_stevenson_with_matter_that_matters)



# Canadian Woodfiring *By Keith Rice-Jones*

In Spring 2008, Celia and I attended the International Woodfire Conference at Sturt Contemporary Craft Centre in Australia. I gave a presentation on Canadian woodfiring which turned out to be mostly B.C. potters! Over the next few issues of the newsletter I will expand on some of the material that I received and show you some pictures of these committed individuals.

I had asked people to give me some idea about their motivation for woodfiring and if I start with Alison Tang—who works in Errington on Vancouver Island—it will set the scene. Alison writes:

*“You wanted to know why I wood fire. I often ask myself that around 26 hours into the firing, usually when I’ve been awake all this time (not to forget the 10-14 hours prior to lighting the kiln that I spend loading it.) Usually the question comes in the form of, “Why am I doing this again?” And then electric-kiln earthenware casts its appealing little pull on me. Though if I had half a brain, my artistic passions would swing to miniature pen and ink drawings and I’d give up clay all together. My worry is that if you tell the other wood-firing potters this, they will come and take away my kiln. So what should you tell them? The party line about pyromania, the kiss of the flame...? The simple truth of it is that I like the look of wood-fired pottery: porcelain, light stoneware, dark stoneware, shinos, dry surfaces, crusty ash deposits, warm earthy surfaces. It also feels like the most natural way to fire my pots. It’s not the most commercially desirable look for pottery on Vancouver Island, and it’s not the most efficient way to fire my work. But then, if I wanted a lucrative and efficient profession I wouldn’t be making pots at all.”*

Alison’s kiln is a tried-and-true design that is the basis for many other designs: two chambers with a separate firebox and side-stoking into the second chamber. Paul Davis (the current potter at Sturt, see: [www.sidestoke.com/Sturt/index1.html](http://www.sidestoke.com/Sturt/index1.html)) fired Alison’s kiln when he was over here in 2005.



Alison Tang’s kiln ready for unloading.

the gas kiln goes through the second kiln before exiting up the flue. More on the Shadbolt kiln later.

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*The simple truth of it is that I like the look of wood-fired pottery...*

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Kiln designs vary with the type of firebox, and some potters will use the second chamber for salt. Traditional fireboxes draw air through/across the firebox taking ash with the heat, but many smaller chamber kilns use some variation on the Bourry Box which is very efficient. Essentially, the Bourry Firebox is higher and draws the heat down and across the ember bed before the bag wall and chamber.

Graham Sheehan on Gabriola Island has free plans for his single-chamber Bourry Box kiln and it has been copied many times. Graham’s wood chamber uses a common chimney with his larger gas-fired trolley kiln. When I was rebuilding my own gas kiln with a trolley I wanted to also build a smaller second kiln for salt and use the common chimney for both – in a similar fashion to the design that is used for the Shadbolt Ombu kiln. The heat from

I was intrigued to find that Graham had close-off dampers to isolate each kiln and fired them separately. Graham fires on his own, like me, and he explained, “Well, the amount of energy it takes to get the smaller kiln up to what it would be at the point when the first one is up to temperature is relatively small and I don’t know about you, but when I have finished a 14-hour firing I want to go and have a beer.” I got it in one.....

Over the next few newsletters look for more on woodfire kilns, the potters and their pots. For some online information on Bourry Box kilns, see: [www.sidestoke.com/bourrybox/bourrybox.html](http://www.sidestoke.com/bourrybox/bourrybox.html) [www.sidestoke.com/bourrykiln/bourry.html](http://www.sidestoke.com/bourrykiln/bourry.html)

For some further reading on Woodfiring see: [http://homepage.eircom.net/~thelobook/log\\_reading.html](http://homepage.eircom.net/~thelobook/log_reading.html)



Graham Sheehan’s single-chamber Bourry Box kiln, Gabriola Island.

## Christmas Studio Sales

### Can it be that time already?

Promote your Christmas studio sale in our November newsletter—it’s free with your guild membership! Send in your information (who, what, when, where) and include a photo as well, if you have one. Send in your information by October 15 in order to ensure that it is included in the November newsletter. Email the editor at: [editor@bcpotters.com](mailto:editor@bcpotters.com)

## Heart of Darkness: Making Clay in Australia *By Steve Harrison*

Years of concentrated research have gone into making these bowls. These pieces are like no other in that their provenance is known from their source in the soil to their exhibition in the gallery.

No one makes clay like this anymore and I think that is a shame. It's not even clay in the usual sense.

On the surface of each rock granule there is a tiny layer of particles that have been liberated from the stone as it decomposes over the millennia, turning imperceptibly—atom by atom—into clay.

Rock fragments I have selected are spread out to dry on the workshop floor and then roughly crushed, so that when I stir them vigorously in a bucket of water the kaolin coating rinses off and dissolves. This is best done by hand. When a machine is used it breaks up the rock too much creating something far too rock-like and not enough like clay. Stirring is gentle and achieves the purpose exactly.

This process is repeated over and over, slowly building up a clay slip which is then left to flocculate and be adjusted before decanting. Adjustment in this case means adding some acid.

I spent the first six months of the year liberating and concentrating the clays for this show. This clay embodies the essence of my intellect's integration with the area in which I live.

I feel strongly someone should be doing this. I love the result so much; it can't be gained in any other way. This jet-black, dry matt surface is so rich and dark and rewarding, like a plum pudding made with suet. What it brings out from my ground rock glazes when fired

with local wood or clippings is something special which gives this work its marquee.

As this clay is fragile and sensitive the bowls must be thick to increase their strength. I have had to fire each one on an individually crafted ceramic plaque to prevent it melting into the kiln shelf. Traces of their setting in the kiln remain embedded in the foot rings. The ground-rock glazes have developed a rich dark patina with rusty iron rims where the glaze has melted away, thickening at the foot in some instances, revealing an opacity and opulent richness that I don't often see. There are occasionally tiny fragments of my hand-made, local weathered white-bauxite fire bricks embedded in the softening glaze as they slowly spall away, and the outer surface is sometimes blushed to opalescent blue or yellow with small deposits of natural fly ash from the firing.



*The preceding article is taken from the invitation to Steve Harrison's exhibition "Heart of Darkness" at the Legge Gallery in New South Wales, Sept. 23 to Oct. 11, 2008. For more information on his pottery, [click here](#).*

### Did you attend an inspiring workshop recently?

Share your experience—write about it for *your* newsletter!

Send your stories to: [editor@bcpotters.com](mailto:editor@bcpotters.com)

# It's THE MAD POTTER'S Birthday! We are combining our 7<sup>th</sup> Birthday with the LARGEST CLAY DAY EVER!

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# Impressions from the East

By Melany Hallam & Zhana Nedelcheva

One of the great things about British Columbia is the variety of people living here and the depth that this brings to the artistic community. Guild member Zhana Nedelcheva brought her own unique vision to ceramics in B.C. when she and her husband emigrated from Bulgaria in 2005. She is involved in many different mediums of expression, but ceramics is her passion.

"I produce one-of-a-kind sculptural ceramics and wall tiles," she said in a recent interview with *Canadian Immigrant Magazine* (see full article [here](#)). "My style is very different from local ceramics, and it means something to me to bring something new to the local arts community."

She explains that her major teacher in art is nature.

"Shape is a leading principle in my ceramics—enormous coloured puzzles, constructions and intertwined cats coexist with knights, ravens and spirited horses," she says.

"My art is aimed at a large circle of connoisseurs—from the exterior

**Bride, by Zhana Nedelcheva.**



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monumental [...] art of stoneware, which is my true strength, to the ethereal tiles and small intimate sculptures created to occupy a special place in the interior. A favourite topic of mine is impressions from the East, such as "Kama Sutra", "Red Horse", "Sphinx." This is a small part of the Eastern taste, carried over in my studio."

In 1999, Zhana graduated from Sveti Kliment Ohridski University in Sofia, Bulgaria, with a Master in Fine Arts, majoring in sculpture and ceramics. For two years, she taught at the School of Fine Arts and Ceramics at Stara Zagora. She was also involved in a number of group exhibitions, and in 2004 was awarded "Young Artist of the Year" for a solo ceramics exhibition. Her current work process includes:

**Clay Sculptures.** "First I make a solid clay sculpture from white stoneware with grogs and then hollow out the shape. After very slowly drying the earthenware, I biscuit fire it at cone 05-03. Then I glaze the work with a brush. The first coat glaze I apply on the concave surfaces and wipe with a damp sponge. Then I apply more coats of glaze and fire at Cone 06-03. Sometimes I decide to make crackles to add more effects on the glaze. I open the kiln when is still hot and bring out the ceramics and spray them with water. After applying contrasting coloured stains, I fire the works again at Cone 05 to close the open cracks."

**Handmade ceramics tiles with inserted glass.** "I use handmade slabs of white stoneware with grogs to create the tiles. Then I cut out a hole for the glass. After adding texture and decoration to the tiles I dry them slowly. I bisque fire at cone 05. After glazing, I fire again to cone 06-03. Then I cut the glass (to the size of the back hole of the tile) from a sheet of glass. I decorate them with copper wire, coloured glass and ceramic stains and fire at low temperature. When everything is fired, I attach the already decorated and fired glass on the back of the tile."

"Colour balance and composition harmony have always been the main accent for me, rather than detail and reality," says Zhana.

**Zhana Nedelcheva** has a show running Sept. 28-Oct. 24 at the Purple Door Gallery on Bowen Island, and will be exhibiting at Place des Arts (Coquitlam) and the New Westminster Art Gallery in 2009. She works in the morning in her studio and in the afternoon as a caregiver in a private school in New Westminster. For more information on her work see [www.artzhana.com](http://www.artzhana.com)



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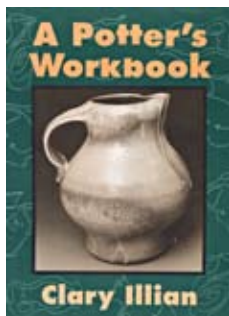
Annual dues for all members are now payable each September. The time to renew your membership is running out. Don't delay—please take the time to renew before it slips your mind. You can renew online or by printing and submitting a form, or you can call or drop by the Gallery of BC Ceramics (604.669.3606). If you have any questions about your membership, please contact Matthew Freed at [membership@bcpotters.com](mailto:membership@bcpotters.com) or at 604 899-3383.

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Or you can open the membership form, print it out and mail it in with your cheque. Click the link below for the printable form: <http://bcpotters.com/MembershipFORM.pdf> 

## Book Review *By Patty Osborne*



**A Potter's Workbook, by Clary Illian**  
University of Iowa Press, 1999  
ISBN 0-87745-671-2  
\$26.50 (soft cover)

Several years ago I had the pleasure of spending two days at a workshop where Clary Illian threw pots on a treadle wheel and talked about the shapes she made and her life as a potter. Her book, *A Potter's Workbook*, is much like that workshop: simple and unadorned, yet thought-provoking. With the help of photographs of leatherhard pots, mostly thrown by students, and her own line drawings, Illian discusses the internal space and energy of

different cylinder shapes, the effects of rims and bases, options for adding handles, spouts and lids, and the dynamic flow of the curve of a bowl. In the concluding chapters, Illian encourages potters to train the eye to truly see the curves and proportions of a pot in order to begin to "succeed intentionally rather than by happy accident" and to be aware of the sources of one's preferred shapes and then move forward to express one's own voice. Illian succeeds in her hope that this book will "provide a way to see, to make, and to think about the forms of wheel-thrown vessels" and provides a valuable resource for potters who have mastered the basics of throwing and are now tackling the intricacies of form, or for experienced throwers who want to better understand the shapes they produce. 

*Is there a book that was important to your development as a potter? Send in a short review to share with other members. We'd love to read about it.*

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# Are you in Business?

Or, to pay or not to pay (the taxman) *By Derek Johnson*

## Do you have to pay taxes or at least file taxes?

First let's deal with a couple of common misconceptions.

- I do this for a hobby, therefore I don't have to pay taxes. **WRONG.** If you are carrying on an organized attempt to make money (even small amounts of money) and have a reasonable expectation of making a profit, you are in business in the taxman's opinion. The key phrase is "reasonable expectation of a profit."
- Don't I have to fill out something to start a business? **NO.** The moment you decide to carry out an attempt to make a profit and take a step towards that, you are in business. Your business expenses are eligible from that point on and of course your profits are taxable. There still has to be a reasonable expectation of a profit. Notice a theme?
- I get to write-off all the expenses of my pottery, my car, some of my house expenses, telephone, etc. Maybe. First see point number one.

## Are you in business? If you are a business:

- Direct pottery costs are eligible, such as glaze materials, clay, tools.
- Larger costs like a wheel or kiln will have to be depreciated (only part of the expense is allowed each year).
- Electrical or gas is deductible but it can be tough to figure out what percent the business uses. If you have a "reasonable" rationale for the allocation, the taxman will accept it. Have it written down and please don't cause yourself grief down the road, make it reasonable. The government does not accept "guess-ti-mates".
- Vehicle expenses - you will need to keep a log of business trips and subtract out your personal expenses. And with all expenses keep receipts and organized records.
- Home expenses – This gets tricky. You can only write-off expenses if you make a profit and only those directly related to your business activity. Do not try to write-off mortgage interest without first talking to an accountant. It is allowed, but may cost you dearly when your house is sold.

## When does a hobby become a business?

Many potters start out making pots for themselves and it evolves into a business. If you make pots for yourself and sell the odd one to friends and family, it is not a business. But when you actively attempt to make things to sell and have that mythical "reasonable expectation" of a profit you have crossed the line.... Welcome the world of business.

If this all sounds a bit convoluted, it is. The government is trying to walk a thin line between not allowing people to write-off hobby expenses and taxing any "reasonably real" income.


**Derek Johnson** has more than 10 years experience providing advice to small businesses. He currently works for the non-profit Community Futures office in Powell River as a business advisor and loans consultant. He also occasionally attempts to make his own pots in a joint home studio with Melany Hallam, your newsletter editor, and was the mastermind behind the building of our propane-fired Minnesota Flat-top kiln. For practical business advice in your area (with no strings attached), look for the Community Futures office nearest you at [www.communityfutures.ca/provincial/bc/](http://www.communityfutures.ca/provincial/bc/) or in the Lower Mainland [www.smallbusinessbc.ca/](http://www.smallbusinessbc.ca/). Revenue Canada also has guides and forms at [www.cra-arc.gc.ca/menu-e.html](http://www.cra-arc.gc.ca/menu-e.html).

## Chop Marks and Signatures

Send in your chops and have them available through the Guild. For the form, click on the link here:

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You can email it back to Debra Sloan at [sloanyip@shaw.ca](mailto:sloanyip@shaw.ca) as an attachment. Or print and mail your sheet[s] to

Potters Guild of BC,  
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attention: chops. 

## Clay Workshops at the Surrey Art Gallery – Fall 2008

### Hands-On Throwing Workshop

Improve your basic techniques on the wheel through repetitive disciplined throwing exercises. Focusing on the dynamics of the basic cylinder, you will learn to have more control of this form, which will allow you to create a broader range of work.

Instructor: D'Arcy Margesson  
2 Sessions \$136 | #679810  
Sun, Nov 9 & 16, 10am - 4pm

### Kiln Operations Workshop

Learn all about electric kiln operations from an experienced pottery instructor and kiln manager. Topics include: kiln loading and stacking, firing schedules, cones and temperatures, trigger adjustments, troubleshooting, maintenance and safety.

Instructor: Murray Sanders  
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# Techno Tips: Reducing the Firing Temperature of a Glaze

By Tony Hansen, Digitalfire

*Moving a cone 10 high temperature glaze down to cone 5-6 requires major surgery on the recipe or the transplantation of the colour and surface mechanisms into a proven cone 6 base glaze.*

It is amazing how many potters push their clay body or kiln (and utility bill) to the limit (e.g. Cone 11) to get a special reactive glaze to melt the way they want. It would be rare to find an industrial manufacturer who could afford or would have the desire to do this. It only makes sense to fire to the lowest possible temperature. It takes much more energy, for example, in a typical poorly-insulated pottery kiln to increase the temperature by 1 degree at 1000C than it does to do the same at 500C. Obviously, lower temperatures mean less wear and tear on kilns, especially electric. Not-so-obviously, it can be easier to keep the temperature even throughout the kiln at lower temperatures and thus easier to soak at the end. In addition, lower temperatures are easier to fire to a programmed schedule and easier to keep consistent firing-after-firing.

At the same time, it does not make sense to fire too low either since quality and strength

issues come into play below about cone 1. It is important to realize that high temperature firing is not a requirement for strength and quality ware. The range of achievable color is actually better, in most cases, at lower temperatures. Lower-fired bodies can also be very dense and strong. Dental porcelain, albeit an extreme example, completely melts into a white pool of glass far lower than any typical functional porcelain would even begin to densify. Admittedly the mullite-glass-silica microstructure characteristic of high temperature porcelains is not as highly developed in middle-fire bodies, but even with the simple glass-bonding-of-aggregates mechanism you need make no apologies for cone 5-6 or lower porcelain strength.

The question is: Can you juggle the amounts of ingredients in a typical cone 10 glaze recipe to make it melt at cone 6? The answer is almost always no. Low fire and cone 10 glazes are fundamentally different in the sense that they employ different fluxes. All low fire glazes contain lots of boron, the principal flux. Cone 10 glazes contain none. Additionally, oxides that behave as fluxes at cone 10, like MgO

and CaO, act as the opposite, refractory matting agents, at low temperatures! Cone 5-6 is a bit of an in-between land in this sense. Some boron is almost always needed because common cone 10 fluxes like feldspars, calcium carbonate, talc and dolomite do not melt well at all at cone 5. Thus, increasing the content of existing fluxes will not be sufficient, you must introduce new more powerful (better melting) ones and learn a new set of dynamics and tradeoffs. There are some special purpose middle-temperature glazes that will melt without boron (e.g. high zinc ones) but these are the sole domain of middle temperature and they are difficult to manage, I will not discuss them here.

Cone 10 glazes employ raw materials instead of frits and these individual materials do not really melt at one temperature, they usually soften over a wide range. Microscopically, raw glaze powders are mixtures of a wide variety of mineral particles that fall into groups that have very different melting temperatures and behaviours. Many particles actually do not

*Continued on Page 10, Glaze*

## Discovery Art Travel

2008-2010  
CERAMICS EXCURSIONS

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melt on their own at normal kiln temperatures but they are dissolved into the melt created by others. Consider an inventory of some of them (we won't look at colorants, opacifiers, variegators):

- Pure mineral flux particles like dolomite, whiting and talc are active melters at cone 10 but certainly not at cone 6. You could increase them all you like, you'll never get a workable cone 6 glaze. By 'workable' I mean that although you might be able to get it to melt, so much of the recipe would be taken up by these materials that a stable low expansion glaze could not be created for the lack of alumina and silica.
- Kaolin and ball clays are refractory (melt high) and they have to be dissolved by other things. To reduce a glaze's melting range the percentage of these materials obviously must be reduced. However their amounts can only be taken down to about 15% or the glaze slurry won't suspend or dry hard (unless you employ organic binders that introduce side effects not easily dealt with by potters or small operations.) More important, clays are the key alumina supplier, taking them too low will detrimentally affect glaze hardness and melt viscosity and increase thermal expansion.
- Silica is nowhere close to melting at stoneware temperatures. It has to be dissolved by other materials that create a fluid melt. Attempting to employ high temperature fluxes at cone 6 is not going to dissolve any badly needed silica into a melt.
- Feldspars (and Nepheline Syenite) have complex chemistries and soften over a range of temperatures, they begin to melt at cone 6. However they don't melt well. If you add enough high-thermal-expansion feldspar to a high fire glaze to melt it at cone 6 you will have a guaranteed crazing glaze as well as one that is likely to leach because sodium and potassium will be oversupplied.

The bottom line is that we cannot just reorganize a cone 10 recipe to melt at cone 6. We must add something new, a flux or fluxes not normally found in cone 10 glazes. We must also reduce the proportion of silica and alumina in the glaze, since even with added fluxes it is not possible to get a glaze to dissolve the amounts of high melting alumina and silica typically found in cone 10 glazes. I am not saying it is impossible, you might be the magician who has found a way. But remember, the challenge here is to adjust

an existing cone 10 recipe to melt at cone 5- 6 and not craze or leach or scratch easily and still have good application and working properties. That is not easy.

The most obvious solution is to add powerful fluxes like zinc oxide or lithium carbonate which are not commonly used or needed at cone 10. They melt very early and vigorously and can impart significant melting effects in small amounts in some circumstances. The only problem is that this is not one of those circumstances. A little zinc is not going to dissolve a lot of refractory particles. A lot of zinc and/or lithium to make the glaze melt at cone 5-6 will create a whole new animal and a whole new set of problems, especially with regard to colour response, surface character, tendency to devitrify (crystallize), crawl, bubble, etc.

I want to point out that when I say we need to 'add something new', I did not mean a material. I meant an oxide. Materials are composed of oxides, and most materials contribute more than one oxide, sometimes six or eight different ones, e.g. feldspars. When you talk about a fired glaze and the way it melts and solidifies, you are talking mainly about chemistry (oxides), whether you like it or not. If we add or remove feldspar, for example, we are making a fundamental change in the balance of oxides in the glaze because feldspar contributes so many oxides. This does not jibe with the objective of making changes that will give the greatest reduction in melting behaviour accompanied by the least change in overall glaze appearance and fired properties, e.g. colour response, thermal expansion, surface character, working properties.

There are two main approaches we can take.


#### Method 1: Transplant Mechanisms

At the risk of negating most of what I have just said, identify the "mechanisms" in the glaze and transplant them into a good base glaze for cone 6 that has similar surface texture

and degree of melting. Compare with a flow tester if needed. Answer these questions:

- What gives it the color? Is it a stain, a metal oxide, a stained clay or mineral, or the growth of micro-crystals (surface or entrained) that have a characteristic colour? Put this 'mechanism' into a cone 6 base. Note however that you need to think about whether a color depends on a sympathetic chemistry in the base glaze. Many stains, for example, require that the base glaze be zinc or magnesia free, for example. Others require the presence of a certain amount of CaO. Crystallization likewise depends on the presence of specific oxides.
- Is the glaze opaque or transparent? If it is a deep and vibrant colour, especially one that is darker where the glaze is thicker, it is likely a transparent that contains a colorant that can be seen deep into the glass layer. If it has a pastel surface it likely contains a colorant plus has an opacity mechanism (contains an opacifier, is crystallizing, or is not completely melting.) If it has a variation in coloration (without variation in thickness) then there may be some sort of crystallization going on to produce the color. If it is just white all over then it is opacified. If the white turns to transparent at contour edges, then crystallization is involved in the opacity (e.g. from titanium dioxide). Actually, just look at the recipe. Does it have an opacifier like tin oxide, titanium or zirconium? Does it have a colorant like cobalt or chrome oxide? Non-crystallizing opacification and color mechanisms will often transplant into another base.
- Is the glaze variegated or mottled? If the effect is a result of the presence of rutile or titanium then transplant either material into the cone 6 base glaze.
- Does the glaze have speckles that are a product of a granular or unground material?

Continued on Page 11, **Glaze**



**Talk at Emily Carr: Paul Mathieu**

*The Art of the Future: Fourteen Essays on Ceramics* is the working title of a new book by Paul Mathieu that is nearing completion. Paul will give a well illustrated public lecture, sponsored by the North West Ceramics Foundation, that will explore the themes of the book at Emily Carr University room SB 301, October 4, at 3.30 pm. The lecture will consider the relationship of ceramics to culture in terms of its meaning across time and history as a way to re-evaluate and define a contemporary role for ceramics as an art of the future.

Paul Mathieu teaches ceramics at Emily Carr University. He is the recipient of the Governor General Award in visual Arts 2007 and the Saidye Bronfman Award for Excellence in Crafts 2007. He is the author of 'Sexpots: Eroticism in Ceramics'.

If so, transplant these contributors into the new recipe. If the speckles blossom or bleed in the original you may need to choose a different speckling agent for cone 6. For example, use granular manganese instead of granular ilmenite.

There are other factors that are not as easy to transplant. These often relate to visual effects in glazes that are very fluid or runny. For example, glazes that form small or large crystals or a crystal mesh across sections of the surface during cooling need to have very fluid melt. Often matte cone 10 glazes are actually over-fired cone 6 or 8 glossy glazes that have completely crystallized. For this type of glaze you will need to have an equally fluid melt in the cone 6 range to transplant things into (that means it is going to need to melt well at cone 2-3.) This will not be easy since getting a glaze to melt that low means removing much of the low expansion silica and alumina, that in turn leads to crazing.

Another mechanism that is not easy to transplant is the character of the surface. Dolomite matte glazes, for example, have a pleasant silky surface that is a product of what CaO and MgO do around cone 10 in the right host glaze. Obviously you cannot transplant this exact mechanism because MgO does not suddenly melt at cone 6 the way it does at cone 10. You must create or find a base that already has the surface you want (or adjust one that is close since mattiness is a product of the glazes chemistry, that is, the mix of oxides it contains.) Fortunately, at cone 6 alumina, calcia and magnesia mattes are all possible.

#### Method 2: Add the Magic Oxide

The magic oxide to add is boron (B<sub>2</sub>O<sub>3</sub>). The reason boron is such an ideal additive is that it is more than a flux, it is a glass like silica, yet it melts low. This is a marvellous oxide! One of the beauties of boron is that it is compatible with most colorant, matte and variegation mechanisms. But there is another even more important reason: Boron has a low thermal expansion; additions of it will reduce glaze crazing. This is so important because most high temperature glazes contain far more high-expansion Na<sub>2</sub>O, K<sub>2</sub>O than can be tolerated at cone 6 without producing crazing. In addition the low-expansion silica and alumina they contain must be reduced to achieve melting at cone 6, thus moving the glaze toward crazing.

The next questions is: What source of boron should you use? The answer is: frits. There is a

boron frit out there to meet almost any fluxing challenge. However, each frit contributes other oxides besides boron. This means that to reach the goal of only increasing the boron in a glaze you need to be able to reduce other materials in the recipe that contribute the same non-boron oxides as the frit. Thus, to do what I am about to describe, you need a ceramic chemistry software program. The kinds of material juggling I am about to describe are dealt with in the examples section of Digitalfire's INSIGHT software manual.

The first thing to consider is this: Does the glaze need clay (does it settle in the bucket or lack dry hardness?) or does it have too much clay already (does it shrink and crack on drying?).

- If the former, use something like Ferro Frit 3134 (20% CaO 10% Na<sub>2</sub>O, 23% B<sub>2</sub>O<sub>3</sub>, 46% SiO<sub>2</sub>). Why? Since it contributes Na<sub>2</sub>O and CaO, that means you will be able to reduce the amount of feldspar and whiting/dolomite/wollastonite in the glaze (a pre-melted frit melts so much better than any of these materials). That reduction will also mean a loss of Al<sub>2</sub>O<sub>3</sub>, but since the frit contains none you will be able to supply the Al<sub>2</sub>O<sub>3</sub> using a kaolin.

- If the glaze already has too much clay, then use Frit 3124, it has almost the same chemistry, but it sources alumina also (meaning you can reduce alumina-contributing clay). If the amount of clay in the glaze is OK, then try Frit 3195, it is balanced enough to be a glaze in itself.

The second last question is: What level should the Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> be at in the newly adjusted glaze? An obvious suggestion might be to adjust them to about 2/3 of what they were. However, a rule of thumb is to always have as much alumina and silica as you can in the glaze. But, since B<sub>2</sub>O<sub>3</sub> (boron) performs the same function as silica you can afford to have lower SiO<sub>2</sub> in the interests of good melting. Also, boron has very good alumina-dissolving abilities, thus it is often possible to leave Al<sub>2</sub>O<sub>3</sub> at the same levels as it was in the cone 10 glaze. Boron is really great stuff.

The last question is: How much boron do I add? I would start with about 0.3 molar equivalents. If the glaze is reactive and has to be very runny to achieve the desired effect (like the ones in the book "Mastering Glazes"), you might have to take the boron as high as 0.8.

#### Some Other Points

If the cone 10 glaze is a stony matte and is not melting enough, then to duplicate it faithfully I guess you have to make a cone 6 glaze that is not really melting enough either.

However this is certainly not advisable for functional ware. You will want to fire tests to compare the degree of melting (consider using a melt flow tester.) Be sure to try the glaze in thick and thin layers and watch for crazing and leaching. Different minerals release their oxides to the melt at different temperatures, even though they might have similar chemistries (for example wollastonite and whiting both contribute CaO yet the latter requires a higher temperature to release it to the melt.)

#### Here are some common cone 10 glazes and suggestions on how to either convert the glaze to cone 6 or create a similar look:

- White matte: Just opacify a cone 5-6 matte base glaze using Zircopax or tin oxide.
- Tenmoku: Use high iron in a high-boron fluid base. However you will not get the same light brown crystal lines on the edges of contours and it will crystallize a yellowish colour rather than maroon if cooled too slowly.
- Robins Egg blue: Add a little cobalt and rutile to a matte base.
- Black: Add a black stain to a clear glossy glaze.
- Purple/Lavender: Use a high magnesia base clear and add cobalt carbonate or oxide (or a blue stain) around 1% and adjust as needed. Use Frit 3249 or Fusion F69 to source the MgO because MgO sourcing from raw materials will not melt at cone 6.
- Celadon: Add a green celadon stain to your clear base.
- Oatmeal/Cream: Add some iron, a light brown stain or rutile. Rutile will also variegate it. Add a little Zircopax to opacify if necessary to bring out the pastel effect.

For more articles on adjusting and testing glazes, [click here](#) to see the links at the bottom of this page on Digitalfire's website.

#### Pottery Videos Online

There are a whole lot of video resources online now—and they're all free! If you haven't checked them out, it's worth a look. For short video tips and interviews, see the site that Don Jung sent out in the last eBroadcast: [www.ceramicartsdaily.org/video/index.aspx](http://www.ceramicartsdaily.org/video/index.aspx) Check out the hand-held clay extruder video—it's hilarious. Well, it's hilarious for an instructional video, anyways...

You can also search for pottery videos on [www.youtube.com](http://www.youtube.com). For example, if you type in "leach pottery" you can get a virtual tour of St. Ives in Cornwall conducted by Simon Leach. Pretty cool stuff!



# ClayLines

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## Calls for Entry

### The Third International Festival of Postmodern Ceramics 2009 and the CERAMICA MULTIPLEX exhibition

The Third International Festival of Postmodern Ceramics 2009 and the exhibition CERAMICA MULTIPLEX is the traditional international exhibit of ceramics being held under the patronage of the Ministry of Culture of the Republic of Croatia and the Varazdin City Council. The organizer is KERAMEIKON, Croatian Ceramic Association in partnership with the City Museum of Varazdin. The exhibition will be held from March 6 to April 5, 2009 at the City Museum.

The title of the exhibition: NATURE AS ADVENTURE

No Fee.

Deadline for submission of applications: post-dated Oct. 30, 2008

Click this link for more info: [www.kerameikon.com](http://www.kerameikon.com)

### National Call for Cheongju International Craft Biennale & the B.C. Call for 2010 Olympics

Canada has been selected to showcase its craft artists at the prestigious Cheongju Craft Biennale, to be held in the fall of 2009, in Cheongju, South Korea. Details about this national call for entry are now available on CABC's website by [clicking here](#) and on the Canadian Crafts Federation website: [www.canadiancraftsfederation.ca/korea](http://www.canadiancraftsfederation.ca/korea). Deadline for submission is March 2009.

The Craft Association of BC (CABC) has arranged an additional exhibition opportunity for B.C. craft artists, to be held at the Vancouver Museum and to be shown with a selection of works from Canada's submission to the Biennale in Korea, as well as a travelling exhibit of the fine craft from Korean artists. This exhibit, 2010: Unity & Diversity in Contemporary B.C. Craft, will be held from mid-January through April 2010 in celebration of the 2010 Winter Olympics. This is an excellent opportunity to show our work to the world. The Call for Entry for the BC 2010 exhibit and details are available on our website at call for entry. Deadline for submission is May 2009.

Please note that these events are open to all B.C. artists and you may enter both calls for entry. The timing of the calls allows you to submit to both with the same work, or with different pieces, as you see fit. For both calls for entry, an online submission process will be available spring 2009.



Members of the Thompson Valley Potters Guild attending the FingerPlay Exhibition.

The FingerPlay Exhibit was in Kamloops Sept. 4 to 27. The Kamloops volunteers really outdid themselves and I am thrilled!

I especially want to thank the great group of people from the Thompson Valley Potters Guild who interfaced for PGBC, and volunteered their hours to monitor the show for the duration. The show area was not secured and it was necessary to have people there during opening hours. The City of Kamloops provided a huge donation and all round support.

Initially, I worked with Barbara Berger, manager of culture and heritage for the City of Kamloops. Barbara was enthusiastic from Day One, and was able to obtain a \$1,000 donation, from the City of Kamloops which was used as our initial funding for the printing of our catalogue for the exhibition. Without this donation we would not have been able to print a catalogue. Barbara was taken ill very suddenly last month. Cara Garden stepped in to take over. It was a huge undertaking for Cara who went full speed to get the invitation/announcements designed and printed. She did a great job on short notice. Cara liaised with Jeanne Hungar, our representative in Kamloops. Jeanne is with the Thompson Valley Potters Guild and she sends her thanks as well:

*"Thank you to Michelle Finlayson, Karen Palmer, Margaret Stewart-Smith, Lynne Woodruff, Sheila Macdonald, Jody Tippett and Ann Eggleton for volunteering their time towards the FingerPlay Exhibition. They monitored the show during the exhibition hours.*

*Thank you to Lorel Sternig for bringing some expertise and encouragement to the exhibition set up. Also, thank you Luba Baron for dropping in and spending the next six hours working with us. Thank you Bonnie Keats, Rhona Ames, Karen Palmer and Lorel Sternig for allowing your work to be displayed.*

*And, BIG thank you to Karen Palmer for agreeing to work with me from the beginning until the end when it is crated and sent on its way."*

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Invitation to the Prince George FingerPlay exhibition at Two Rivers Gallery, [www.tworiversgallery.ca](http://www.tworiversgallery.ca).

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