

Apply water-soluble dyes and clear-coat finishes to your work

Show Your Colors

By Michael Allison

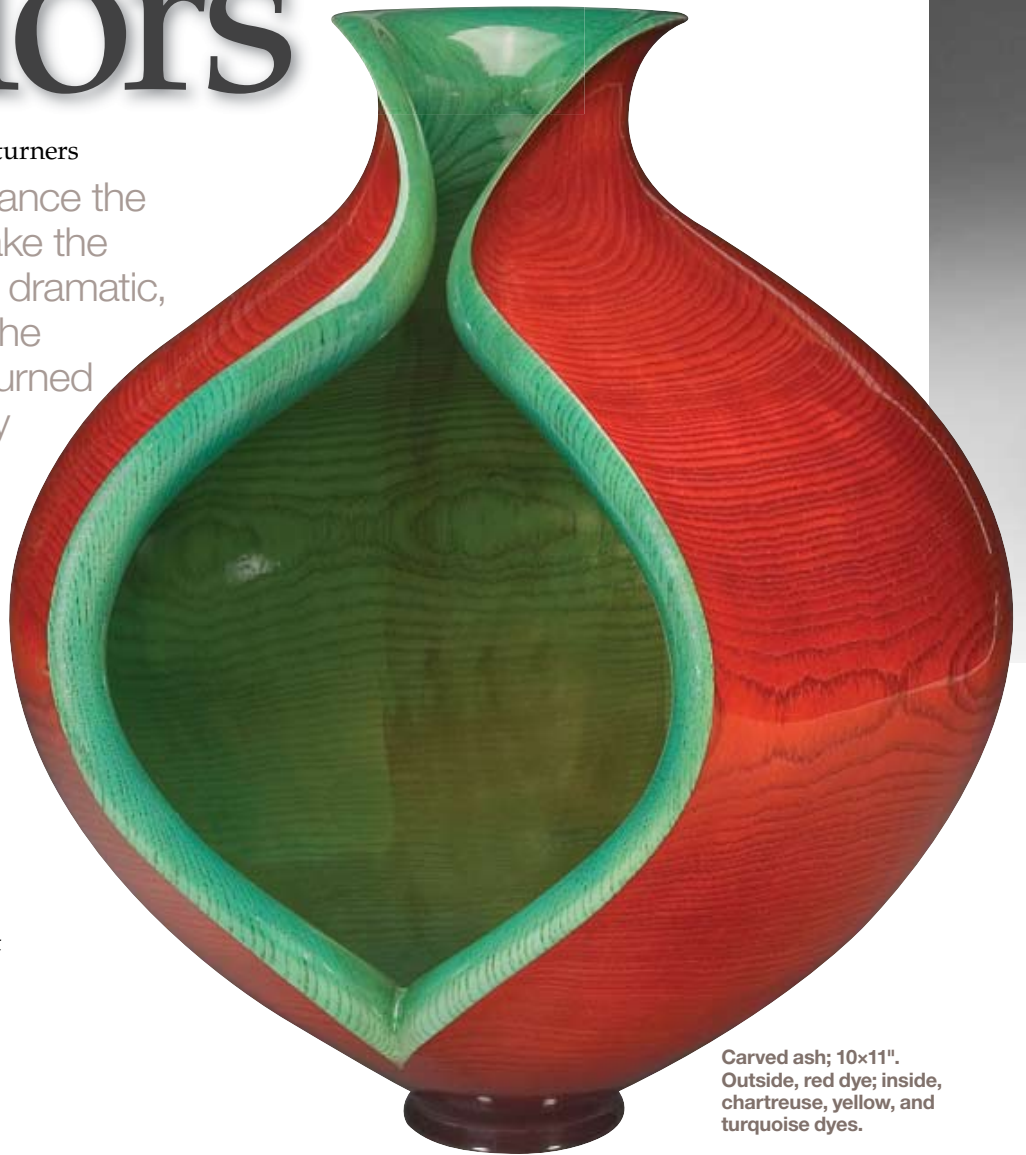
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American Association of Woodturners

Applying color can enhance the properties of wood, make the impact of a piece more dramatic, and ultimately expand the artistic possibilities for turned wooden objects. Ready to give it a try? You are even encouraged to color outside the (grain) lines!

When members walked among the tables of turned pieces in the Instant Gallery at the Louisville symposium, their eyes were treated to a feast of color—further evidence that coloring wood is now an accepted surface treatment among woodturners.

The techniques shown here on turned pieces were derived from the American guitar trade, where they first appeared in the 1920s on mandolins and jazz guitars.

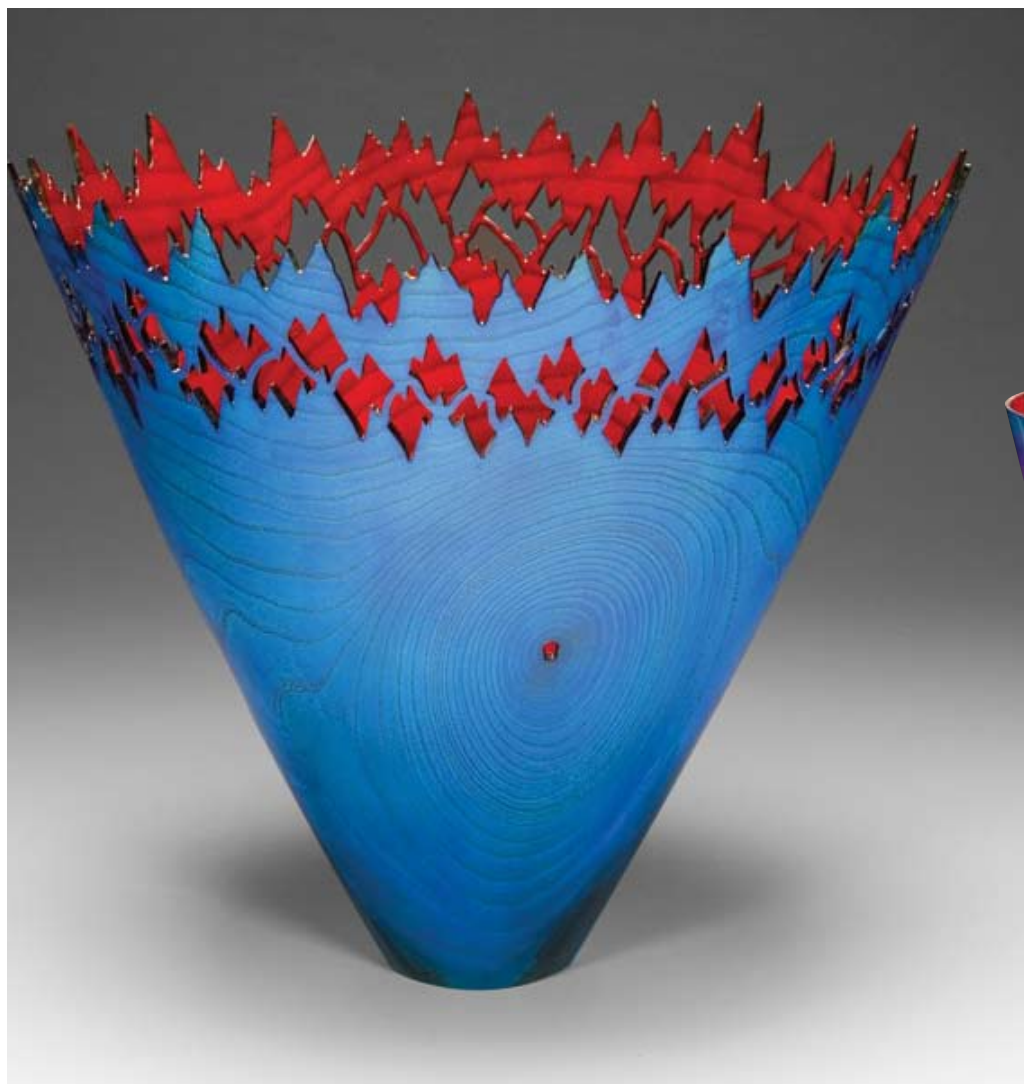
The basic approach is to first apply color to the raw wood using water-soluble dyes, then add a clear-coat finish, which provides depth and luminescence. Unlike stains, which contain finely ground particles of pigment suspended in



Carved ash; 10×11".
Outside, red dye; inside,
chartreuse, yellow, and
turquoise dyes.

a liquid vehicle, dyes are dissolved metal salts. Because the color is at the molecular level, dyes do not mask or cover up the wood. All finishes enhance wood, but dyes really pop the grain.

As the examples here demonstrate, you can color virtually any kind of turning or vessel. Different species produce distinct looks, but the dyes work best on light- and medium-toned



Left: Ash; 8×9". Red interior accentuated by piercing. Below: Ambrosia red maple; 13×7". Vertical shaded finish on ambrosia grain; hot-red interior for contrast.

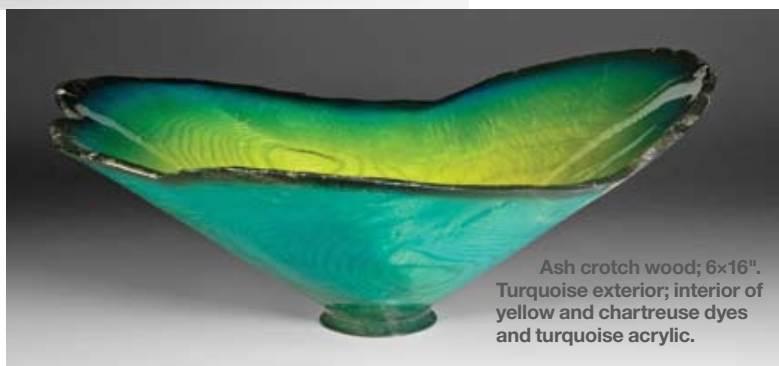


wood, including ash, birch, maple, cherry, elm, willow, and butternut.

Your first project

A green-turned natural-edge vessel is a good first project to illustrate how color application transforms ordinary wood. Although ash is often undistinguished, it is a ring-porous hardwood with a strong grain pattern.

Almost any color recipe works on ash's blond tone. What follows is a recipe for a particular color palette (Homestead dyes and Golden paints were used in this example). Feel free to experiment with colors and combinations, how you handle the bark, and whether, and how you use paint.



Ash crotch wood; 6×16". Turquoise exterior; interior of yellow and chartreuse dyes and turquoise acrylic.

Right: Cherry; 11×14". Red, yellow, orange, and purple dyes with transparent dioxazine purple acrylic.

Apply color

Stabilize the bark edge before finishing by using some combination of trimming, wire-brushing, or scorching with a woodburning tool, as shown in **Photo 1**.



Leave a tenon on the bottom to accept a lathe chuck or other holding device, as shown in **Photo 2**. Screw a shop-made holder onto the tenon so you can handle the piece while coloring. Spray or wipe on water to raise the grain, then sand with 600-grit sandpaper when dry. With single-color dye applications, the initial dye coat can be used to raise the grain (it is easier to see sanding imperfections on a dyed surface). Simply reapply the dye after sanding.

Turn over the vessel and rag on turquoise dye, as shown in **Photo 3**. Don't worry about lap marks or apparent unevenness. Wipe several times to saturate the surface to get the desired color. Once the surface is equally wetted, the color will be uniform. In the case of thin walls, open grain, or voids, wring out the rag and make several lighter passes to prevent the dye from soaking through.

If there are rag marks, continue wiping lightly as the rag becomes drier. For a single interior color, rag on a contrasting color (such as red-orange) using the same technique as on the outside.

To apply a "red sunburst" finish on the inside, spray an initial pattern of yellow dye in the center, as shown in **Photo 4**. Always apply lighter dyes first, and also apply dyes before any acrylic paint.

Next, spray a mix of 50/50 red and orange dyes, as shown in **Photo 5**. Start with a soft spray and make several passes. Overlap the edge of the yellow center. Pull the airbrush away from the work in order to control the shading effect.

Apply another blend of bordeaux dye, filling the space between the red-orange and the bark. Use the same blending techniques as described earlier.



1 To prepare the bark, scorch the bark edge.



2 Attach a shop-made holder to the tenon.



3 With a rag, apply the first coat of dye.



4 Airbrush the initial light color in the interior.



5 Overlap the blended dye in several passes.



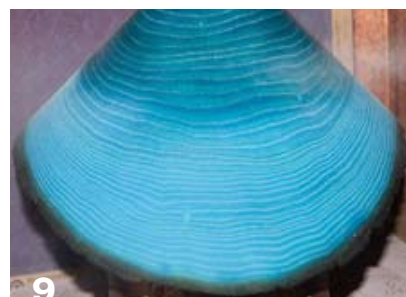
6 Airbrush the interior with red dye.



7 To define the bark, apply a gray edge.



8 A light-gray shade helps define the foot.



9 As a first step to finish, spray a shellac coat.



10 After remounting, apply wipe-on varnish.



Ash bowl; 6×16". Step-by-step instructions in this article include three dyes and two acrylics.



Spray red dye over the bordeaux dye and shade it where it overlaps the red-orange dye shade, **Photo 6**. The red over bordeaux will be the deepest shade, followed by the red over red-orange, then the red-orange, red-orange over yellow, and the yellow in the center. Remember, no matter how it is applied, the dried dyed surface will look flat and dull without a top coat. Experience will teach you how to anticipate and visualize the final outcome.

To give the bark edge a strong definition, darken it with airbrush paint. I use shading gray because it is less intense and allows for shading the side of the bark, as shown in **Photo 7**. First, spray the narrow edge: Move the airbrush close and gently pull back the fluid trigger so a very narrow pattern emerges. Position the airbrush so the overspray misses the sides. Then do both sides of the bark, leaving a modest shading effect where the gray meets the red. As an alternative, you can paint the bark with a small brush.

Spray a light-gray shade on the

foot for some definition at the bottom of the vessel, as shown in **Photo 8**.

Apply a clear coat

You are now ready to apply a built-up, high-gloss finish to bring out the full effect of your color treatment. If you have been using such a finish for your natural pieces, then it will likely work fine. If you have not mastered this skill (or do not want to invest in spray equipment) then apply a low-tech wipe-on finish.

For ring-porous woods such as ash, naturally textured surfaces (burls), or wood with holes (ambrosia maple), I prefer a solvent-based wipe-on finish over a sprayed finish. It achieves a high-gloss appearance that accentuates the surface texture rather than filling the wood's natural features with finish. In my shop, I use high gloss Minwax Wipe-On Polyurethane.

For best adhesion, spray a barrier coat of shellac (Zinsser Seal Coat is a good premixed product) to seal the dyed and painted surface, as shown in **Photo 9**. A carefully

applied first coat of wiping varnish will also work. If you applied acrylic, wait seven days for the paint to cure before applying varnish.

Mount the turning on a rotating device (variable-speed lathe or gear motor) with its speed in the 10–20 rpm range, as shown in **Photo 10**. The rotation of the work enables the finish to be flowed on evenly and prevents runs and sags. Use an applicator bottle, which can easily charge a pad. Fold cotton material into a 2×3" pad; your pad should be sufficiently thick to hold enough varnish and large enough to easily overlap the previous rotation (lap). Think of the pad as a brush.



Ash; 10×11". Piercing reveals a red interior.



11
With a pad, wipe on varnish.



12
Sand built-up coats with a 400-grit disc.



13
After sanding, apply finish coats.



14
With an 8"-diameter wheel, buff the surface.



15
Rag on color to the foot of the bowl.

To varnish the outside, begin at the foot and apply a series of overlapping coats, as shown in **Photo 11**. After each complete rotation, slide the pad up toward the rim without removing it from the surface, and begin the next lap. To prevent lap marks, make sure the previous rotation is still partially covered.

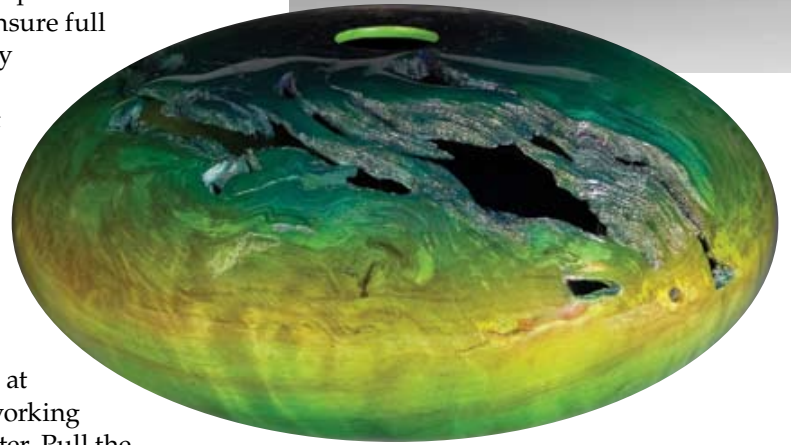
When you get to the natural edge, follow the profile of the vessel rim to ensure full coverage. Apply varnish to the natural edge at rest, and then smooth it out with the pad while rotating.

Repeat the process for the inside, starting at the edge and working toward the center. Pull the pad off gently at the center. Have a portable spotlight handy and inspect the surfaces to make sure there are no missed areas.

As the coats build, look for air bubbles that may form when the pad leaves the edge or the center. Lightly brush these out with the pad. Problems will go away when you sand out the build coats. The finish coats, however, will be critical.

Build up sufficient coats to allow for sanding without cutting through to the wood (you will probably need to apply about 10 coats). You do not need to sand between coats as long as you re-coat within 24 hours.

Wait at least one day to sand. A 5" 400-grit Mirka Abranet abrasive mesh disc on a Velcro foam pad (homesteadfinishing.com) works well, as shown in **Photo 12**. Your goal is to level any high spots

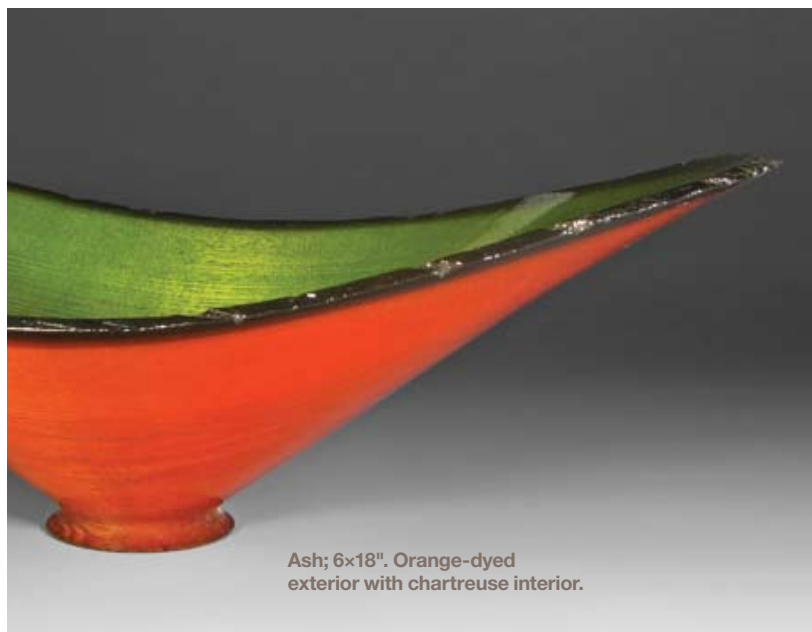


Birch burl; 7x14". Yellow, chartreuse, and turquoise dyes with green acrylic top rim.

and leave the overall surface smooth, but not to sand out the grain pattern or other features. Be careful when sanding near edges. Subsequent coats will adhere to the sanded surface regardless of when applied.

Apply the finish coats with the same wiping technique, as shown in **Photo 13**. To cover the surface left by the 400-grit disc, you will likely need three more coats.

Buff out the final coats, starting with the coarse compound followed by medium and fine, as shown in **Photo 14**. Sand only those specific areas that need it with 800-grit paper or 1000-grit Abralon pads; these fine scratches buff out more easily. Run an 8" wheel at 1700 rpm maximum,



Ash; 6x18". Orange-dyed exterior with chartreuse interior.



Red maple sculpture; 6x14". Bordeaux, purple, and orange dyes.



Willow burl; 10x11". Shaded Bordeaux dye and magenta acrylic on bland burl figure.

smaller wheels at about 2500 rpm. Keep the buffs well-charged and let the compounds do the work. A heavy touch with the coarse compound can burn off the finish.

Using a padded jam chuck and tailstock, turn off the bottom tenon. Trim the nub by hand and prepare for finishing.

Rag on the outside color on the foot, as shown in **Photo 15**. I pad on several coats of shellac, sand, top coat, and then lightly buff.

Michael Allison (www.michaelallison.us) is a studio woodturner who lives in Storrs, Connecticut. He's a member of the Central Connecticut Woodturners chapter.

Materials

There are a variety of dye and ink products on the market. For some time I have relied on the Trans-Tint/Trans-Fast series (homesteadfinishing.com). This brand represents the latest version of the traditional aniline/chemical dyes.

Read the excellent website documentation so you clearly understand how they work, as well as their limitations (for example: interior use only). The dyes are packaged as 2-ounce concentrated liquids or 1-ounce powders. The liquid form is handy in that you can easily mix custom colors as well as make concentrated batches without worrying about straining. I use the Trans-Fast powder form for turquoise since this color is not available in liquid.

I also spray Golden airbrush acrylics (dixieart.com) to achieve special effects such as deepening dyed colors and darkening accents. Acrylics are pigmented products. You need to apply these with discretion; applied too heavily, acrylics can build up and mask the wood. Use the transparent colors when possible.

Equipment

You can rag or pad on a one-color dye coat. In order to apply shaded or "burst" finishes and achieve other special effects, you will need a serviceable airbrush, such as the Iwata Eclipse series, CS or BCS (\$110 from dixieart.com). These tools consume very little air; a small compressor (¼ hp) will do.

Airbrushes have a dual-action trigger—press down for air and pull back for liquid. In order to control the shape and intensity of the spray, become familiar with how these interact. Always press the air first, then add the liquid.

You can also vary the pressure to the airbrush with an in-line regulator (the range is between 20 and 35 lbs/sq in). To avoid dark spots, always move the airbrush before you pull back the liquid trigger. Holding the gun close to the work produces a smaller pattern with a more definite edge. Pulling away from the work softens and widens the pattern and, generally, this is what you want for the transitions in a shaded finish.

Practice these techniques on a circular piece of finish-sanded birch plywood before you try them on a vessel.

Dedicate your airbrush exclusively to water-based products. For spraying shellac, Badger makes a small, inexpensive spray gun (model 250, about \$23 from dixieart.com) that you can dedicate for this task.

After you wipe on a clear varnish, you'll need to buff the surface. Buffs (cotton flannel only) of various shapes (bealltool.com) work well. You will also need coarse, fine, and medium Menzerna compound bars (stewmac.com). Each compound should have its own dedicated buff.

Wear a respirator rated for paint vapor while spraying dyes and paints. —Michael Allison