

David Challier

**An artist and scientist who gets energized
by the process of transforming raw materials into art
and helping other artists bring their ideas to life.**

Dallas, TX - USA

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Highlights

Mentored by Camille Viot, triple background in Life Sciences | Earth Sciences | Fine Arts, and 25+ years' experience in binders, fillers and adjuvants to optimize processed materials quality for construction, fine arts and decorative arts.

Collaborated with 30+ world-class artists in media including ceramics, glass and metal.

Created and led 200+ lectures, workshops, demonstrations, guided tours and exhibitions in above related fields.

12 years' experience at prestigious French institutions (Manufacture Nationale de Sèvres, Ôkhra, CIRVA).

Proven record building all types of kilns, optimizing firing methods to help artists push boundaries in their projects.

Passionate about worldwide heritage; I leverage ancient techniques and bring them into the modern era.

Education & apprenticeship

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| 2007 | Certified as Body of Art Technician (<i>summa cum laude</i>) by Manufacture Nationale de Sèvres (external competition). |
| 1999 | Master's degree in Fine Arts Education (<i>cum laude</i>), (Beaux-Arts de Marseille - ESADMM, France).

Course of study included a two-year international exchange program at Umprum Design and Fine Arts National School (Czech Republic):
— Researching and developing a temperature scheduling model for glass annealing,
— Designing and producing refractory plaster molds for glass casting. |
| 1997 | Bachelor of Arts (<i>magna cum laude</i>), in Fine Arts Techniques, (École Supérieure des Beaux-Arts - ESBAM, Marseille, France). |
| 1995 | Bachelor of Science - Life and Earth Sciences (Major); Art History, Photography and Fine Arts (Minor), University of Aix-Marseille (France). |
| 1992 | Baccalaureate, Nature Sciences & Agronomy (Lycée Agricole, Avignon, France). |
| 1996 | Apprenticeship at Poterie du plan de l'Amandier (Nils Descotes-Genon, Gordes, France):
— Plaster mold techniques for ceramics, glass and iron,
— Throwing, calibration and casting of high temperature porcelain. |
| 1991→1992 | Apprenticeship at Saint-Gobain Research Provence (France): production and composition of industrial refractory zirconium and chrome-based concrete/bodies. |
| 1989→1991 | Apprenticeship at Camille Viot (La Rochegiron, France):
— Composing refractory materials for raku sculpture from grogs and raw clays,
— Refractory concretes and mortars production for bricks, burners and shelves. |

Notable professional experience

2005→2009 Researcher, Manufacture Nationale de Sèvres (Sèvres, France)

Conducted research on the following topics:

- ___ Finding alternative kaolin sources across the world due to depletion of Limoges (France) quarries,
- ___ Formulating all modelling, throwing, calibration, porcelain, and stoneware pastes while preserving whiteness and plasticity,
- ___ Replacing traditional bone ash wet process with synthetic and industrial dry components to keep plasticity in bone china pastes,
- ___ Replacing toxic components (lead, uranium, cobalt, mercury, copper, chromium, manganese, etc.) used in traditional color palettes by leveraging industrial techniques and experience. Established new processes and formulas for synthetic alternatives of the entire color spectrum, based on trichromy:
 - ___ Magenta created from tuned Purple of Cassius, obtained by recycling factory gold residue,
 - ___ Cyan created by combining vanadium pigments with zirconium to stabilize color and eliminate residue exposure to operators, users and the environment,
 - ___ Yellow created by combining praseodymium pigments with zirconium to achieve same benefits,
- ___ Formulating silica granulometry to control and tune expansion ratio of modern porcelain paste (PN a.k.a. "pâte nouvelle de Sèvres") in relation to the colors/glazes applied to it and avoid cracking.

Used mixing, fusing, grinding and refining techniques at very high temperatures to generate colorants (Bleu de Sèvres), pigments, stains, frits (alumina-free zinc crystalline), glazes, paints and gilding components used specifically for traditional Sèvres porcelain production.

Created model and process to rebalance water, dry matter and electrolytes in casting slips so they can be reused in production.

Created program to directly compute the component quantities to rebalance a slip to compensate for the density variance during production in relation to water losses in batch quantity.

Industrialized, implemented and ensured conformity to laboratory research results and methods into production.

1999→2005 Teacher, Conservatoire des Ogres et des Couleurs (Ôkhra – Roussillon, France)

Designed and taught workshops for artists on glazes, ceramic pigments, tempera skills and techniques.

Designed workshops on dyes, watercolors, pastels, lime coating, Venetian plasters, concrete, colored concrete, frescoes, etc. (led by other teachers/artists).

Attended all of the conservatory's workshops on binders, fillers, pigments and raw materials.

Organized guided tours around local ochres factories.

Organized Ôkhra's exhibition booths:

- ___ "Salons des Métiers d'art et de création" (Carrousel du Louvre, Paris, France – 2002),
- ___ "Couleurs à boire, couleurs à manger" (Roussillon, France – 2003).

1998→2002 Researcher, Centre International d'Art Verrier (CIRVA – Marseille, France)

Established thermal model for cooling of main geometric shapes in plaster molds under the direction of Françoise Guichon.

Created a program to directly compute feasibility, cost and annealing time for glass casting projects.

Collaborated and supported many artists working at CIRVA:

Erik Dietman, Gaetano Pesce, Giuseppe Penone, Johan Creten, Gustavo Perez, Gilles Barbier, etc.

1998→1999 Quality Inspector, Saveurs du Luberon (Apt, France)

Supervised final quality of artisan-made candied fruits and created all candy sugar syrups.

1996→2005 Foreman, Atelier Carreau d'Apt (Apt, France)

Analyzed and learned clay industrialization processes and techniques from raw materials.

Learned how to hand make and extrude custom tiles for the high-end decoration market.

Produced enameled lava, tiles, fused glass and casted glass for customers.

Workshops, lectures, demonstrations, exhibitions, heritage, guided tours

2014→present Founder and CEO, Conservatoire des Métiers du Patrimoine de Provence Alpes du Sud (COMPPAS – Apt, France),

www.comppas.fr

Founder and CEO of COMPPAS, a skills and knowledge transfer center
in the areas of coatings, aggregates, concretes, and paintwork.

The mission is to guide artists, artisans and masons to excel in their areas.

The method includes workshops, demonstration, production support, etc.

Created and instructed the following notable workshops:

- ___ Plasters and limes in traditional heritage masonry – Les Courens / Chantier du Castellas (Beaumes-de-Venise, France – July 2019),
- ___ Gallo-Roman roof tile manufacturing:
 - ___ Les Courens / Chantier du Castellas (Beaumes-de-Venise, France – July 2019),
 - ___ Prieuré de Salagon (Mane, France – April 2018),
 - ___ Espace fours (Dauphin, France – April 2016),
- ___ 20 tons yellow ochre heritage refining and production during the “Journées européennes du patrimoine” – Colorado de Rustrel (Rustrel, France – September 2018),
- ___ Heritage refining and production of 20 tons of yellow ochre during the “Journées européennes du patrimoine” – Colorado de Rustrel (Rustrel, France – September 2018),
- ___ Gallo-Roman oil lamp molds and production for Musée d’Apt (Apt, France – August 2018) and Espace fours (Dauphin, France – April 2016),
- ___ Ceramics, plasters and limes in traditional heritage masonry – Les Courens / Chantier du Castellas (Beaumes-de-Venise, France – August 2018),
- ___ Archeo-experimentation: kilns and mills – Espace fours (Dauphin, France – July 2018),
- ___ Adobe, coatings and paintings color formulations from natural-colored raw clays – Usine Bonnet (Rustrel, France – July 2018),
- ___ Floor tiles renovation and replica for Notre Dame des Anges (12th century chapel) – Prieuré de Salagon (Mane, France – April 2018),
- ___ How to use online databases for geological prospection and source your own materials for ceramics:
 - ___ Vincent Tournebize (Le Grand Serre, France – March 2018),
 - ___ Maison de la Céramique du Pays de Dieulefit (Dieulefit, France – February 2018),
 - ___ Usine Bonnet (Rustrel, France – September 2017),
- ___ Geology and ceramics: identification of rocks beneficial to ceramics (four days) – La Magie du Tour / Joëlle Swanet (Marchin, Belgium – December 2017),
- ___ Characteristics of mineral binders (calcic lime, hydraulic lime, cement and plaster) – Le Gabion (Meyrargues, France – November 2017),
- ___ Kaolin harvesting for high temperature firing ceramics; watercolors and pastel chalk formulation; decorative paintings and coatings made from raw clays – Usine Bonnet (Rustrel, France – September 2017),
- ___ 25 tons kaolin heritage refining and production during the “Journées européennes du patrimoine” – Colorado de Rustrel (Rustrel, France – September 2017),
- ___ Traditional Provence techniques to make your own plaster and clays from raw local materials – Espace fours (Dauphin, France – September 2017),
- ___ Formulate your own clay from raw materials for all ranges of firing temperatures (four days) – Prometer, Patricia Cassonne (Saint-Sulpice-les-Feuilles, France – July 2017 – four times | August 2017 – three times | August 2016),
- ___ Tiles making and firing using 12th century techniques – Usine Bonnet (Rustrel, France – August 2017 – four times),
- ___ Create your own watercolors from raw natural self-harvested materials – Usine Bonnet (Rustrel, France – August 2017 – twice),
- ___ Create your own pastels chalk from raw natural self-harvested materials – Usine Bonnet (Rustrel, France – August 2017),
- ___ Formulation of clays for throwing using 12th century techniques – Usine Bonnet (Rustrel, France – August 2017),
- ___ Mosaic production and firing using clay tesserae – Usine Bonnet (Rustrel, France – August 2017),

- ___ Gallo-Roman tiles kiln construction with L'Occitane employees; gypsum firing and plaster crushing - L'Occitane (Forcalquier, France - June 2017),
- ___ 100 kg indigo production from raw materials for use in cosmetic products - Couleurs Végétales de Provence (Lauris, France - April 2017),
- ___ Slips, vitreous engobes and glazes color formulation (three days) - Point Fusion (Cabrières-d'Aigues, France - February & January 2017, March 2015),
- ___ Gallo-Roman mosaics - Musée d'Apt (Apt, France - February 2017),
- ___ Geology and ceramics: make your own clays for high temperature and medium range temperature firing (three days) - Point Fusion (Cabrières-d'Aigues, France - February 2017 & January 2014),
- ___ Watercolor and gouache formulation and production - Usine Bonnet (Rustrel, France - December 2016),
- ___ Pastel chalk formulation and production from raw minerals and organic pigments - Usine Bonnet (Rustrel, France - December & April 2016),
- ___ Lime watercolor and fresco color chart:
 - ___ Maison de l'Architecture (Bordeaux, France - September 2016),
 - ___ Usine Bonnet (Rustrel, France - May 2016),
- ___ 20 tons kaolin heritage refining and production during the "Journées européennes du patrimoine" - Colorado de Rustrel (Rustrel, France - September 2016),
- ___ Colored clay tesserae formulation and firing for mosaicists - Usine Bonnet (Rustrel, France - July & May 2016),
- ___ Decorative coatings formulation from crude clay, sands and crushed straw - Usine Bonnet (Rustrel, France - May 2016 - twice),
- ___ Lime watercolor and fresco formulation - Usine Bonnet (Rustrel, France - May 2016),
- ___ Traditional Italian mosaic manufacturing - General public (Marseille - May 2016 - twice),
- ___ Bricks formulation and production from crude clays - Usine Bonnet (Rustrel, France - May 2016),
- ___ Refractory molds production for glass casting and glass fusing - Usine Bonnet (Rustrel, France - May 2016),
- ___ Glazes and vitreous engobe made from raw clays and wood ashes - André Nouaille-Degorce (Berdine, France - May 2016),
- ___ Contemporary techniques for plaster production from raw gypsum - Usine Bonnet (Rustrel, France - April 2016),
- ___ Color formulation for vegetal natural dyes - Usine Bonnet (Rustrel, France - April 2016),
- ___ Gallo-Roman oil lamps fabrication and firing on wood kiln (five days) - Espace fours (Dauphin, France - April 2016),
- ___ Terracotta clay production - Usine Bonnet (Rustrel, France - April 2016),
- ___ Clay and indigo grinding for producing Maya blue (three days) - Usine Bonnet (Rustrel, France - April 2016),
- ___ Calcic lime and hydraulic lime firing - Usine Bonnet (Rustrel, France - April 2016),
- ___ Mosaic production and firing - Usine Bonnet (Rustrel, France - March 2016),
- ___ Handmade tile and brick molds fabrication and production - Usine Bonnet (Rustrel, France - March 2016),
- ___ Master class: geology and ceramics - Prometer, Patricia Cassonne (Saint-Sulpice-les-Feuilles, France - August 2015),
- ___ Clay formulation for anagama high temperature wood firing - Michel Cohen (Sigottier, France - April 2015),
- ___ Ceramic paste from raw clay (four days) - Point Fusion (Cabrières-d'Aigues, France - January 2015),
- ___ Iron and copper welding - Point Fusion (Cabrières-d'Aigues, France - January 2015),
- ___ High temperature glazes (five days) - Point Fusion (Cabrières-d'Aigues, France - October 2014),
- ___ Customize your clay (three days) - Point Fusion (Cabrières-d'Aigues, France - October 2014),
- ___ Low temperature glazes (five days) - Point Fusion (Cabrières-d'Aigues, France - September & May 2014),

Created and provided the following notable **lectures and demonstrations:**

- ___ High Environmental Index of adobe eco materials made from clay, straw and vegetal fillers for thermal and phonic insulation - Les Compagnons du Devoir (Marseille, France - October 2018),
- ___ All types of heritage mills, in particular for traditional plaster fabrication - Les Compagnons du Devoir (Marseille, France - October 2018),
- ___ All types of heritage ovens and kilns - Les Compagnons du Devoir (Marseille, France - September 2018),
- ___ Presentation of COMPPAS and its actions in France - Les Compagnons du Devoir (Marseille, France - September 2018),
- ___ Natural resources and their human engineered applications: clay, plaster, lime, iron and glass - Les Compagnons du Devoir (Marseille, France - May 2018),
- ___ Raw materials transformation through firing in ceramics - École Royale d'Art et de Design de La Cambre (La Cambre, Belgique - December 2017),

- ___ Luberon's limes and other mineral binders for traditional medieval masonry – Alpes de Lumières (Lurs, France – October 2017),
- ___ Luberon's geological history through mineral deposits – Usine Bonnet (Rustrel, France – October 2017),
- ___ Participated in TV program to promote COMPPAS and give an overview of French ochres heritage – France Television (Paris, France – June 2017),
- ___ Ochres, silica and natural sands – Usine Bonnet (Rustrel, France – May 2016),
- ___ Jabron valley farmlands and soils – Fête de la Nature et des Jardins (Noyers-sur-Jabron, France – May 2016),
- ___ Iron production in low shaft furnace:
 - ___ Usine Bonnet (Rustrel, France – March 2016),
 - ___ Espace fours (Dauphin, France – March 2016),
- ___ Ceramic low temperature wood kiln and firing – Usine Bonnet (Rustrel, France – March 2016),
- ___ Plaster production – Espace fours (Dauphin, France – March 2016),
- ___ Eco-materials – Usine Bonnet (Rustrel, France – February 2016).

Organized and provided the following notable **guided tours**:

- ___ Alain Vagh's clay quarries – Joelle Swannet, Caroline Andrin & La Cambre's students, ENSAV – (Salernes, France – August 2017),
- ___ Five clay quarries (earthenware, kaolin, ochres, smectite, marl) and lecture – Usine Bonnet (Rustrel, France – August 2017),
- ___ Kaolin and ochre heritage refining plant (18th century) w/ demonstration – Usine Bonnet (Rustrel, France – August 2017 – thrice),
- ___ Traditional glass factories (from 11th to 18th centuries) – (Simiane-la-Rotonde, France – February 2017),
- ___ General Public Grand Opening of Usine Bonnet (Rustrel, France – December 2016),
- ___ All types of heritage ovens and kilns – Espace fours (Dauphin, France – May 2016),
- ___ Heritage plaster mills – Espace fours (Dauphin, France – April 2016),
- ___ Usine Bonnet calcareous marls quarries (Rustrel, France – April 2016),
- ___ Kaolin, ochres, earthenware and smectic quarries (Viens, France – April 2016),
- ___ Study of the remains of a Gallo-Roman tile wood kiln (Sigonce, France – March 2016),
- ___ Usine Bonnet ochre factory (Rustrel, France – February 2016),
- ___ Lime kilns and quarries (Sigonce, France – February 2016),
- ___ Clay quarries and clay deposits and geology (Viens, France – February 2016).

Created, organized and inaugurated the following **notable exhibitions**:

- ___ Du matériau à l'ouvrage (from raw material to human engineered objects) – Les Compagnons du Devoir (Marseille, France – September 2018),
- ___ Plasters and limes, mineral binders (20 days) – Musée d'Apt (Apt, France – April 2017),
- ___ Iron and glass: manmade materials (20 days) – Musée d'Apt (Apt, France – March 2017),
- ___ Traditional and modern usage of Apt valley and Luberon raw clays (20 days) – Musée d'Apt (Apt, France – February 2017),
- ___ Usine Bonnet: ochres refining factory – Mairie de Rustrel (Rustrel, France – September 2016).

Member of the scientific and artistic committee and creator of the “geology and clays” wing for the **exhibition**:

- ___ Céramiques: dialogues entre tradition et contemporain (Ceramics: A Dialogue Between Tradition and the Contemporary – Prieuré de Salagon (Mane, France – from April to October 2018).

Provided expertise and services for the following notable **heritage conservation** projects:

- ___ Coating and painting industrial machines restoration and preservation from Chauvin's factory (a.k.a. Usine Chauvin – 30 days) – Usine Chauvin (Rustrel, France – May 2017),
- ___ Reproduction of Gallo-Roman traditional habitat using adobe from straw, clay and branches – Musée de Paléontologie et d'Archéologie Pierre Martel (Vachères, France – April 2016).
- ___ Notre Dame des Anges (12th century) floor tiles renovation and replica – Usine Bonnet (Rustrel, France – April 2016),
- ___ Art porcelain restoration – Fondation Villa Datriis (L'Isle-sur-la-Sorgue, France – 2015),
- ___ Brick machines restoration and preservation from a post-WWII family-owned factory – Usine Savouillan (Banon, France – 1998).

2005→present Teacher, Association L'Ébauchoir, Roselyne Rosset (Montfroc, France)

lebauchoir.unblog.fr

Provided a series of lectures and workshops and directed research with a national collective of artists, ceramicists, scientists and geologists (a.k.a. Géopotes) at the association's biannual invitational.

Topics included how to read geological maps with direct *in situ* application, raw material identification, collection, sampling and high temperature firing of produced art:

- ___ Primary chemical elements and their application in ceramics: "from the Big Bang to a bowl" (Montfroc, France - 2021),
- ___ Cenomanian quartz sands, ochres, stoneware raw clays (Russan, France - 2017),
- ___ Terracotta clay production (Saint-Vincent-sur-Jabron, France - April 2016),
- ___ Clays from different geological periods on the same site: Berriasian, Valentinian, Cenomanian, Albian and Burdigalian (Montfroc, France - 2015),
- ___ Kaolin, feldspar (Triors, France - 2015),
- ___ Ochres, silica (Rustrel, France - 2013),
- ___ Lime, earthenware clays (Les Arcs, France - 2012),
- ___ Dolomite, mica, fluor and barium (Les Arcs, France - 2010),
- ___ Fire clays (Lasalle, France - 2008),
- ___ Lime, terra cotta, clays (Montfroc, France - 2007),
- ___ Fire clays: "Fête de la Nature et des Jardins" (Noyers-sur-Jabron, France - 2005).

2007 Teacher, Passageways "Portes et Passages du Retour" (Joal-Fadiouth, Senegal)

www.portesetpassagesduretour.com

Invited to give a one-week workshop to a group of international artists on:

- ___ Crude clay extraction, sampling and production techniques,
- ___ Methods and processes to create watercolor paints sourcing local materials such as acacia resin.

Collaborated with Amadou Kane Sy (Senegal), Muhsana Ali (Senegal) and Helen Ramsaran (USA).

Research

1999→present Founder and CEO, Organisme d'Études Utiles aux Innovations Locales (OEUIL - Apt, France)

Developed research techniques and development of local materials used raw, as binders, as fillers and/or adjuvants in any combination, and their transformation through processing and firing.

OEUIL generated a wide range of materials indexations, characteriz, methods, processes and implementation in ceramics, glass, metal casting and decoration techniques (coatings, Venetian plasters, limewash, frescoes, patinas, etc.).

Notable research projects:

- ___ Characterization of all raw materials that can be used in ceramics in DFW area. Identification and classification of 70 clays among which 25 can be used for stoneware (Dallas, TX, USA - January 2023),
- ___ R&D for ceramics, grogs, clay body, slips, vitreous engobe, glaze from California raw clays and minerals at cone 04, 2, 4, 6, 8 and 10 (Costa Mesa, CA, USA - 2019-2022),
- ___ Adobe formulation from raw or activated smectites (two months, Thibault Cousin), Apt (France) - April 2018:
 - ___ To improve mechanical resistance for eco-construction masonry
 - ___ Create maya blue from vegetal pigments to resist the sun's ultraviolet rays
 - ___ Create suspension gel for paints and glazes
- ___ Gypsum from Queen Jeanne's quarries (12th century) - Espace fours (Dauphin, France - March 2017),
- ___ Low temperature firing glazes chromatic continuum - December 2016
- ___ Customization of ceramic clay for anagama wood firing - Michel Cohen (Sigottier, France - March 2013),
- ___ Established protocols and formulas to stabilize clays used in crude sculpture and crude construction materials (bricks, mortars, etc.) - Muhsana Ali, Joal-Fadiouth (Senegal) - 2007
- ___ Use of green sand for refractory molds for aluminum casting - Alfieri Gardone (Parotiers, France - 1998-2002),
- ___ Grogs characterization and formulation from raw local basalt rocks - Basalt quarry (Rognes, France - 1998-2005).
- ___ Earthenware vessels glazing formulation and techniques - Toni Piteau (Goult, France - 1997-2000).

Kiln construction & restoration

1990→present Founder and CEO, Atelier Labo de l'Olivet (Apt, France)

- 1990 Created my own research studio (Atelier Labo de l'Olivet) and built my own metal, glass and frit kilns as I wanted to go beyond commercial kilns' capabilities, in particular controlling the atmosphere in heating and cooling ramps beyond cone 14.
- 1996 Built a glaze sampler and produced 47,000 samples for all materials (iron, copper, ceramics, glass, cast iron, enameled lava, refractory concrete, etc.) and temperatures ranging from 1,085°F to 2,640°F (cone 022 to beyond 14).
- 2002→present As my reputation grew, I was solicited by many artists (Mali Vignon, André Nouaille-Degorce, Brian Molanphy, Denis Bouniard, Olivia Tregaut, Bernadette Dumas, Michel Cohen, Catherine Vigier, Prometer Education Center) and built 20+ *in situ* custom kilns to fit the artists' specific needs in terms of type (e.g., fritting, casting, glazing, fusing), size, temperature, firing mode (gas, wood, electric) and end use (sculptures, ceramics, terracotta, raku, stoneware, porcelain, iron, aluminum, glass, lava, lime, plaster, bitumen, cade juniper, bread).