

LAM'S VISION 2005 文傑視與樂

Bliss of Vision by Dominic Man-Kit Lam

Born in Swatow, China and grew up in Hong Kong, Lam started Chinese painting since childhood. In 1982, Lam collaborated with the masters Zhang Daqian (Taiwan), Zhao Shaoang (Hong Kong) and Guan Shanyue (China) on a historic painting symbolizing the unity of China.

In 1980, while doing eye research in USA, Lam invented a novel painting process named "Chromoskedasic Painting" or "NanoArt" (see Scientific American, Nov. 1991 article inside).

In 1988, Lam was appointed by President George Bush to be a member of the President's Committee on the Arts and Humanities, and was the first Asian to be so honored. In 1990, Lam was awarded the President's Medal of Merit.

In 1991, Lam was named "Man of the Year" by Asia Society.

In 1999, Lam was selected as one of 99 most accomplished and influential artists in China in the 20th century by Chinese Academy of Art, the Artist Association of China and the National Palace Museum.

On December 18, 1999, Lam founded the World Eye Organization (WEO).

Lam's recent art exhibits include:

2005: Bliss of Vision IV: Lam's Chromoskedasic Painting, Shanghai Doland Museum of Modern Art, March 20 - April 7, 2005.

2004-05: Bliss of Vision III: Chromoskedasic Universe and Black Magic, Lee Gardens, Hong Kong, Dec. 2, 2004 - Feb. 28, 2005.

2004: Invited Artist at the 4th Shanghai Biennale, Shanghai Art Museum, Sep. 28 - Nov. 27, 2004.

2004: Celebrating 20 Years of Hanart TZ Gallery, Hong Kong Arts Centre, Apr. 14 - May 5, 2004.

2003-04: NanoArt: The Chromoskedasic Paintings of Dominic Lam, George Bush Library and Museum, U.S.A. Aug. 31, 2003 - Jan. 10, 2004.

2002: "Galaxy on Earth" (8.0m x 8.8m quadrptych, Chinese ink on rice paper) and "This Land is our Land" (2.5m x 9.5m, mixed media on canvas) on permanent display at the Diaoyutai State Guest House, Beijing, China.

Lam Man-Kit, Dominic: An Appreciation

by Prof. Leo Ou-fan Lee

What is a "Renaissance Man"? Of course the term comes from the time of the Renaissance period, when the great masters of art were also scientific inventors. Since the 19th century, however, science and art seemed to have parted ways --- so much so that in the early 20th century the English critic C. P. Snow saw fit to talk about the "Two Cultures" which, to rephrase Kipling's famous saying, means essentially that "art is art and science is science and never the twain shall meet". That is until we meet the inimitable Dr. Dominic Lam Man-Kit! In him the two cultures collide into a form of artistic combustion that is in ample display in his paintings. He is indeed a rare phenomenon in today's Hong Kong and to meet such an extraordinary man and become his instant friend is, for me, both a great privilege and a pleasure.

Lam Man-Kit – I shall call him Dominic - is not only an exceptionally accomplished scientist. Having first studied physics and biomedicine, he then distinguished himself in teaching (at Harvard and other universities), research (having published over 100 articles and 5 books, including over 17 in distinguished journals like Nature) and scientific invention (he holds 17 patents in medicine). He is also, at the same time, a truly outstanding artist. What seems even more remarkable to me is the fact that, after decades of staying in America, he chose in 1997 to return and moved his life as well as his biotech business, to the place where he grew up : Hong Kong, and it's here that his career in both art, science, business and philanthropy has continued to prosper. As a philanthropist and businessman in Hong Kong he has also created a unique style in his art. Such a feat is no easy task, but Dominic has made it appear so easy and effortless. Science meets art in his creative horizon as a matter of course, as he plies between both with equal dexterity. Given the pressures of Hong Kong's hurly-burly lifestyle, I often wonder how he can ever find the time to do so many things on several fronts at the same time.

But he does, and seems to have more time to spare for pursuing the "good life", for Dominic is also a bon-vivant who has a knack for all the



pleasures that life can afford him. One of his mottos, which I have adopted as my own, is: "Be the first to enjoy and the last to worry" (先天下之樂而樂，後天下之憂而憂). Perhaps the epithet "play-boy" would fit him even better --- not in the usual sense of a womanizer, which is already a worn-out cliché, but more in the postmodern vein of aesthetic play and pleasure. For I believe that Dominic has derived a great deal of personal pleasure from his various fields of "play": he has played with science and medicine, which challenged his intellect and imagination; he has played with business and industry, from which he has accumulated enough wealth not only to be financially independent but also to be a philanthropist (having brought Project Orbis, the flying eye hospital to China in 1982, and established the non-profit World Eye Organization in 1999). Above all he has played with his art, which has always inspired him and given him an unending source of pleasure and meaning. All these "plays", especially the last, have culminated in his latest invention - a new technique of painting, which was named "Chromoskedasic" by Bryant Rossiter, a former Kodak director (see next article: Scientific American, November 1991).

"Chromoskedasic painting" (also known as NanoArt, since the paintings are based on light scattering of nanometer size particles) can be considered a by-product of his scientific practice, for he first accidentally discovered it in 1980, while developing black and white photographs of the retina. The story of how he came about this new invention has been told many times by other people, especially in the news media. I call this an instance of serendipity, of finding something unusual when one least expects it. This can also be applied to scientific inventions, such as Isaac Newton's discovery of gravity (when, as legend would have it, one day he was watching apples falling from a tree) or James Watson's discovery of the "double helix" (when he was lying on the banks of the River Cam in Cambridge, England). The principle and technique of chromoskedasic painting and Dominic's artistic achievement in this new medium hold secondary importance to me when compared to that initial moment of wonder, when accidentally a new world was unfolded in front of his very eyes (pun intended). I would have given anything to be on that spot with him and observe the process of his amazing finding! I can also imagine what a pleasure it must be as he prepares such "science stuff" in his dark-room by overlaying different strengths of photographic solutions such as developer, activator, stabilizer, fixer etc. on black and white photographic paper under various lighting conditions and then takes the paintings out for further touching-up in his art studio or living room to achieve their multi-hued and often colored effects. When I first walked into his living room during a visit, I almost stepped on one of his paintings!

Professor Chu-Tsing Li, one of the world's leading authorities in Chinese art, wrote a special article on Dominic's paintings in which he said that the chromoskedasic process is most suitable for abstract or semi-abstract expressions and that Dominic's endeavor has injected a new life into traditional Chinese art. As a layman I can only marvel at the imaginative landscapes that Dominic has created. They remind me

of a group of celebrated photographs I once saw on the front corridors of MIT: they were created by an MIT scientist (whose name I have forgotten), whose original purpose in taking these scientific photographs was to capture the image of extreme speed, such as when a bullet pierces an apple at initial impact. That scientific discovery is now displayed proudly for everyone to see, as a beautiful work of art. But I think Dominic has gone further than that. He has turned the chromoskedasic process into a subjective art form to begin with, from which he has also created a unique universe that is both artistic and spiritual. I can only use the Chinese term "yijing" (which can be vaguely translated as artistic world or "inscape") to describe it, for I believe its inspiration stems from the Chinese artistic tradition. The rest --- the technical details of shading and color, the unusual effects created by light and chiaroscuro, or as another leading authority in art, Chang Tsong-Zung has so elegantly called it: the alchemy of light --- I will leave to the specialists to comment. But then, Dominic has already received all the accolades from them.

Allow me to add one more anecdote. Dominic and I first met at a public lecture which paired us as joint speakers to an audience of high school teachers. We were supposed to embody the "two cultures" of science and humanities respectively, but I immediately knew that



my role was redundant, as he could speak on both subjects with equal ease --- and more. To the amazement of everyone except himself, at the urging of the moderator and our dear friend Yau Lop-Poon, Dominic ended his talk with an instantaneous recitation of several classical Chinese poems from memory. Friends later told me that he had a mental "repository" of several hundreds of classical poems, long or short, which he memorized from childhood. According to him, this kind of "rote learning" proved very helpful later on when he was studying human anatomy and had to memorize all these Greek or Latin sounding medical terms.

Somehow I felt then, as I listened to his recitation and looked at his painting being projected on the screen, that there must have been some connection between poetry and painting somewhere in the depths of his creative consciousness. Perhaps the words of poetry had been transformed into images in his mind, which were then refracted onto his black-and-white photographic paper and turned into chromoskedasic landscapes of mountains, oceans and clouds. A good illustration of such a transformation is his famous painting "Promises to Keep", which was his imagistic interpretation of Robert Frost's even more famous poem "Stopping by Woods on a Snowy Evening". Here one immediately sees the obvious link and interaction, and a most striking one at that.

In short, Lam's creativity has clearly come from a unique combination of his genetic composition, life experience and personal memory. My intuition was further confirmed when Dominic told me that indeed he likes to watch clouds from the window of his living room, especially the rapidly changing colors at sunrise and sunset. What an enviable idyll: Dominic lives in perfect harmony with his art, even amid the hustle and bustle of Hong Kong.

I have used the word "play-boy" to describe Dominic. I should also underscore the "boy" part of this epithet, for he seems forever young at heart and extremely energetic. Perhaps the word "energy" is also central to our understanding of his art as well. Unlike the typical traditional Chinese paintings, there is tremendous energy in his chromoskedasic strokes and in his other works using more traditional media such as ink, acrylic or enamel. Every time my wife and I visited his studio-residence together with other friends, we felt energized, as if his paintings had miraculously cast their glow onto our hearts and illuminated our souls right on the spot. For anyone who knows Dominic well, such is as it should be, he would not have settled for anything else when it comes to his art and his life.

Leo Ou-fan Lee is Professor at Chinese University of Hong Kong and Professor Emeritus of Chinese Literature at Harvard University



Stopping By Woods On A Snowy Evening

Robert Frost

Whose woods these are I think I know
His house is in the village though;
He will not see stopping here
To watch his woods fill up with snow.

My little horse must think it queer
To stop without a farmhouse near
Between the woods and frozen lake
The darkest evening of the year.

He gives his harness bells a shake
To ask if there is some mistake.
The only other sound's the sweep
Of easy wind and downy flake.

The woods are lovely, dark and deep.
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.

Chromoskedasic Painting

by Dominic Man-Kit Lam and Bryant W. Rossiter

It is a novel method for producing color images on black-and-white photographic paper without using pigments or dyes

Passion --- the chromoskedasic painting reproduced on these two pages --- dazzles the eye with oranges, yellows, greens and blues. The hues are surprising because they were created by applying colorless chemicals to black-and-white photographic papers. Almost all paintings and color photographs consist of pigments that reflect certain parts of the visible spectrum of light and absorb others. But the original chromoskedasic painting contains no such pigments, only white paper and particles of silver.

These tiny particles produce colors not by reflecting or absorbing radiation but by scattering light. Particles of different sizes scatter different wavelengths of light, yielding various colors. The term "chromoskedasic" is derived from Greek roots meaning color by light scattering.

The basic methods of chromoskedasic painting were discovered serendipitously one autumn evening in 1980. I (Lam) was developing black-and-white photographs of a retina, as part of a research project at Baylor College of Medicine. I noticed that some photographs were covered with patches of brown and yellow. Other photographers have undoubtedly observed this same effect. The colors usually appear because the photographic solutions were mixed improperly, because the solutions had deteriorated or because the photographic paper was defective. I wondered how colors could emerge from the use of black-and-white photographic paper and solutions, materials that do not contain dyes or pigments. Having seriously pursued painting for 20 years, I hoped to control the production of these colors and thus exploit the unusual characteristics of the new medium [see "Painting in Color without Pigments, " THE AMATEUR SCIENTIST].

Without understanding in depth the mechanisms that generated the different colors, I systematically searched for the light and temporal conditions needed to produce different colors predictably on photographic paper. I also experimented with the concentrations of such solutions as activators, developers, stabilizers and fixers. By 1983 I had established a procedure for creating the primary colors - red, blue and yellow - and I could combine the three colors to create various shades. During the past eight years, I have refined the techniques by trying different kinds of papers and solutions, and I have attained better control of colors, tones and composition.

Although my empirical approach led to a technique for producing color from black-and-white photographic materials, I had not given much thought to the physical and chemical mechanisms underlying such a process. In the summer of 1989 my co-author (Rossiter) came to visit me in Houston and took an interest in my paintings. He noticed the brilliant red and yellow hues, the occasional metallic sheen, the

three-dimensional character of some objects and the unusual light stability. (Some paintings had been exposed to direct ambient sunlight for more than seven years and had not faded.) From these observations and others, he deduced that the colors in my paintings were a consequence of light scattering from tiny silver particles in the photographic paper. He coined the term "chromoskedasic".

The colors of most paintings rely on a process known as subtractive color. Blue pigments, for instance, reflect blue light while absorbing most other wavelengths. The colors in conventional photographs are also the result of a subtractive process. But instead of pigments, photographs require color sensitive emulsions and developing agents that produce or release dyes (see "The First Color Photographs" by Grant B. Romer and Jeannette Delamoire; SCIENTIFIC AMERICAN, December 1989).



焰 Passion 1984 100 x 250cm

Most black-and-white photographic papers contain silver salts. Under the influence of light and chemicals, the salts decompose to form silver particles. Ordinarily, these particles merely absorb light, yielding tones of black. Those salts that are not exposed to light do not yield silver particles and are washed away allowing the white paper to show through. Chromoskedasic paintings are made using methods

very similar to those employed in black-and-white photography. But chromoskedasic techniques require that the particle growth be carefully controlled through exposure to light and chemicals.

In chromoskedasic painting, the silver particles produce colors through a process known as Mie scattering. In 1908 Gustav Mie first described this scattering process in mathematical terms. He studied how light scatters through a medium consisting of spheres of similar size and electrical characteristics. He found that the wavelength of light scattered by such a medium depends on the size of the spheres.

Mie's theory helped to explain why the sky is blue or why the sun appears red at dawn or sunset. The sky is blue, in part, because dust, water vapor and other particulate matter in the atmosphere are of such a size as to scatter light selectively from the blue region of the spectrum. Similarly, atmospheric particles of different sizes produce some of the brilliant colors of the rising or setting sun. (To be sure, many kinds of scattering, absorption and refraction processes contribute to the color of the sky.)

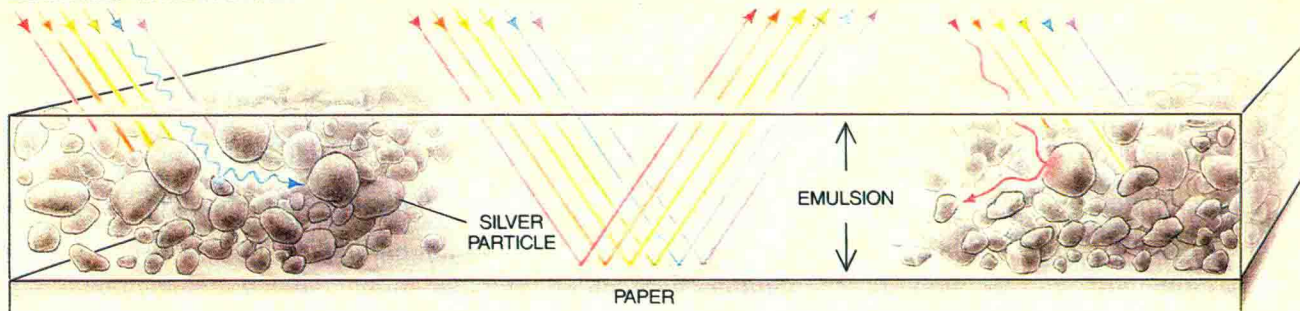
Particle formation in a complex, modern photographic emulsion is very different from the ideal conditions that Mie assumed. Chromoskedasic paintings consist of silver particles that vary greatly in shape and size. Nevertheless, the Mie equations predict the correlation between particle size and the colors created in chromoskedasic paintings.

Using electron microscopy, Donald L. Black of the Photoscience Research Division at Eastman Kodak in Rochester, N.Y., confirmed that regions of a particular color in a chromoskedasic painting contain silver particles that are relatively uniform in size. In agreement with theory, silver particles that produced yellow light were from 10 to 30 nanometers in diameter, whereas particles that scattered red light were 35 to 65 nanometers wide. Scientists still do not understand in detail how the size and shape of the particles influence the scattering of light and hence the colors of chromoskedasic paintings.

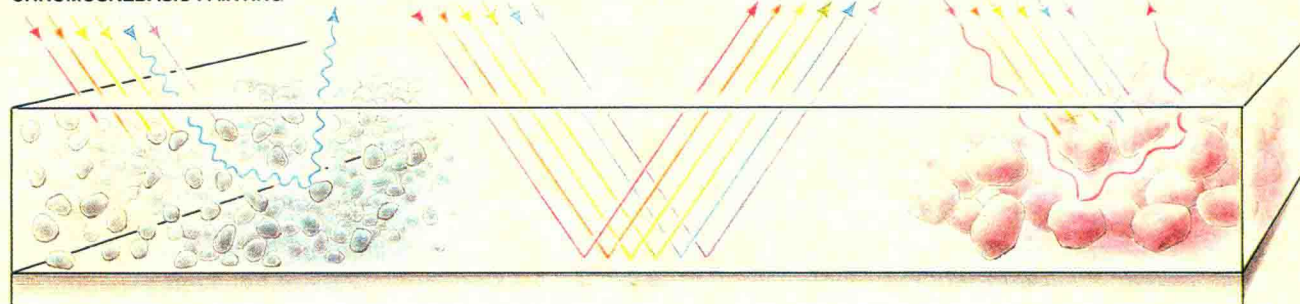
Many of the artistic possibilities of chromoskedasic painting have yet to be explored. Artistic expression is intimately related to materials and media. Watercolors are usually softer than oil paints, black-and-white photographs often bring out textures better than color photographs, and marble sculpture is often more ponderous than steel. Chromoskedasic techniques bring out rich metallic colors that mingle, mix and wash over one another. The methods preserve the artist's expression for decades because the colors endure as silver particles firmly embedded in paper.

That techniques give artists many different ways to produce color images. They can manipulate a variety of darkroom conditions, such as light intensity, chemical concentrations and reaction time. They can precisely control the conditions to create representational paintings. Or they can allow nature to play with light and chemistry to generate abstract images. Chromoskedasic methods can also be easily integrated with conventional photographic techniques or with media such as acrylic, oil, watercolor and enamel paints. We hope chromoskedasic techniques will continue to inspire both artists and scientists.

BLACK-AND-WHITE PHOTOGRAPH



CHROMOSKEDASIC PAINTING



CHROMOSKEDASIC PAINTINGS differ from black-and-white photographs in that the silver particles in the paintings are similar in diameter within a given region. A photograph (shown in cross section at top) is black in areas where particles absorb light. In a chromoskedasic painting (bottom), particles of a certain size scatter a particular color of light.

Reprinted from "SCIENTIFIC AMERICAN", November 1991



遠山 Distant Mountains 1989 42 x 47cm



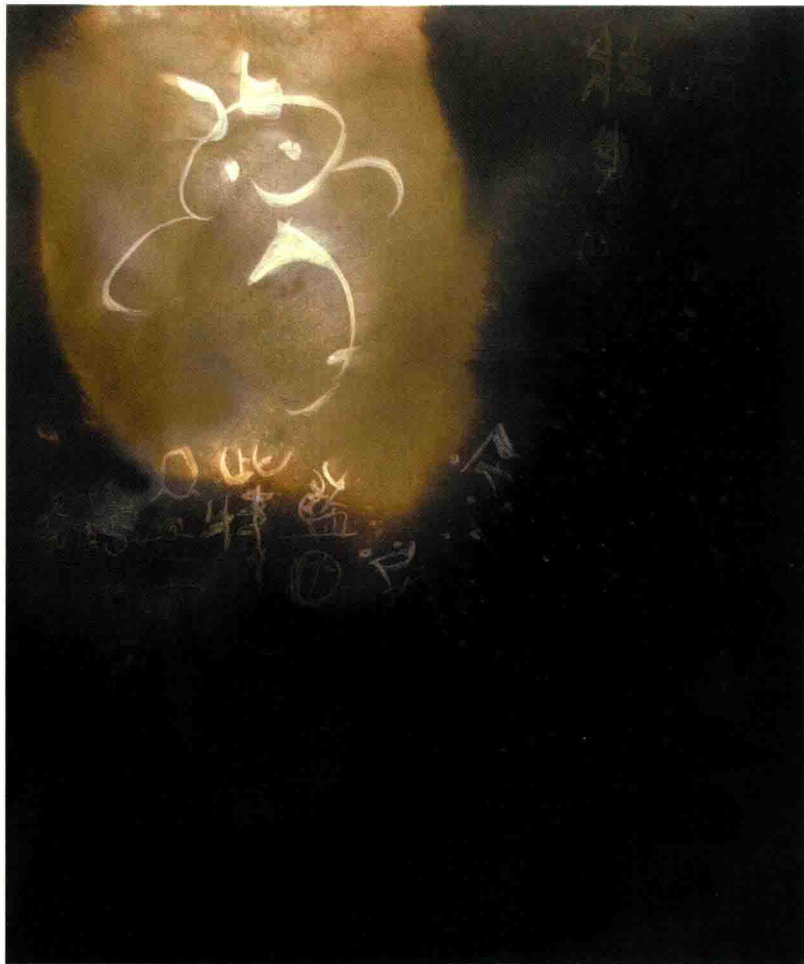
春雷 Distant Thunder 1989 50 x 60cm



幻想曲之四 Fantasie IV Lam 2003



幻想曲之五 Fantasie V Lam 2004



錦瑟無端五十絃 一絃一柱思華年

莊生曉夢迷蝴蝶 望帝春心托杜鵑

滄海月明珠有淚 藍田日暖玉生煙

此情可待成追憶 祇是當時已惘然

李商隱詩 千禧三年林文傑畫意

Sight is the Lens through
which Dreams come true

夢 Dream 2003 60 x 50cm

無言獨上西樓
月如鉤
寂寞梧桐深院鎖清秋
剪不斷
理還亂
是離愁
別是一般滋味在心頭

李後主詞 一九八五年林文傑畫意



無言獨上西樓

In Silence I Walk Up the West Pavilion 1985 100 x 75cm