Article

FILTERING THE FUTURE

One major technological breakthrough leading to a successful industry should be enough for anyone. Kirk Kreutzig of Naperville, Illinois, president of Underwater Research Products International, Ltd. (UR/PRO) would have agreed. His patented filters, the only ones of their kind in the world, allow underwater photographers to film colors accurately in natural or strobe light, and his face masks let recreational and research divers see the true range of hues, including reds, minus the usual blue-green cover-up-- even to a depth of 100 feet. Many of those dazzling coral reef scenes in movies and TV are courtesy of Kreutzig's inventions. He's earned praise from the likes of Shedd Aquarium, I-Max Corp., Eastman Kodak, Sony and the producers of "Wild Kingdom."

A devoted and experienced photographer, Kreutzig began experimenting with filters because "I was unhappy with the loss of true color in underwater pictures. Strobe lights help but they're clumsy, heavy and impractical in many situations," he said.

Twenty years ago, Bill Braker, former director of Shedd Aquarium, sent Kreutzig, newly certified in SCUBA diving, to spend time on one of Shedd's research vessels to document catching fish live for the aquariunm, Kreutzig saw first hand the difference in marine life's

vivid beauty and what the camera was able to record. He began devising new methodology to improve lighting techniques. "In my naivete, I didn't believe what was being used was the best it could be," he said.

Kreutzig and his work soon earned the epithet "cutting edge." Even today, although the term has become trite, one individual can come up with new technology far superior to that of big name companies with big research budgets. Now, these companies, unable to duplicate Kreutzig's results, are eagerly purchasing his inventions.

Nick Coloyianis, noted underwater filmaker who has traveled the world photographing sea life for National Geographic and other sponsors, met Kreutzig in the 1980s at a diving equipment show in Florida where he became interested in Kreutzig's filters.

"Since then I've used them on every job from the Greenland shark to 'Realm of the Lobster,' a one-hour special for the Discovery Channel that aired last December. I'll continue to use every new innovation Kirk comes up with," said Emmy winner Coloyianis.

"Artistically, Kirk and I have the same ideas. We want a subtle, natural look. Water is different in each location, and he's developed the technology to solve the problems caused by algae or other marine life, chemicals, combinations of light, daylight or dark. Once, working in Patagonia, I had trouble balancing whites in deep green water. Kirk solved it and sent me what I needed. Video broadcasting is very demanding. All major manufacturers now use his filters in their design. His ideas are unique."

But Kreutzig didn't stop there. He is applying his filter technology to the steel industry, making it possible to see inside the streams of white-hot molten metal and identify impurities as they pour from the giant ladles. On the horizon are high temperature filters for studying lava flows and volcanoes themselves, and filters that will allow scientists to study the plumes of launched rockets. Kreutzig is also working on face shields for steel mill workers that filter out eye-damaging wave lengths of light and heat.

These latter developments were not a planned direction. More than a year ago, a steel company approached Kreutzig for help with technical photography after seeing his underwater filter information on the internet. "I didn't know enough to say no," said Kreutzig.

To date he has filled six purchase orders and the feedback is good. Three major Great Lakes companies, Bethelehem, Inland and U.S. Steel, currently employ his filters. He expects to release several types of high-temp filters for the market in the near future.

In his quest for color, Kreutzig's own spectrum keeps widening. He continues to pursue other applications for his "kitchen inventions," as he calls them. At present he is working on sunglasses with special properties not only to reduce glare but to filter out undesirable light rays and enhance vision. Unlike blue blockers, his glasses transmit the full spectrum while regulating certain wave lengths and percentages of light.

Recently he gave some of the glasses to a Denton, Texas police officer he knows. The men who wore them discovered that the glasses

also enhanced night vision and the ability to discern shapes more easily in shadows. Now the Naperville Police Department is interested as well.

Sgt. Robert Guerrieri, a fourteen year veteran of the NPD, said some of his motorcycle and bicycle officers have been wearing the glasses for about six months on general patrol and surveillance. "They're helpful in low light situations, especially at dusk or dawn or in Riverwalk mist. When you first put them on everything looks reddish-brown but that fades after half an hour. I do like these glasses," said Guerrieri.

There are, of course, other filters on the market. But only Kreutzig's formulae have what he calls "the magic." He keeps all the "how to" in his head where ideas from unrelated disciplines come together. He credits tenacity most of all. "I always believed my filters would be a success. I just had to reeducate the rest of the world. When people give me reasons why something can't be done it activates my determination. And when people start to copy my stuff they find that even if they identically match the color, the performance won't be the same."

Down the road, Kreutzig plans to work with the military on night vision filters for binoculars, scopes and gunsights. The man whose passion was photography now custom fabricates a continuous array of new products and innovations. With his enhanced vision, he sees no end to the road he's taken.