



Filtration + Separation

Leading the world of filtration

Pure water production:
Filtration and sedimentation

Also:

- Rotary filters
- Water additives
- Nuclear decommissioning

Filtration+ Separation

Leading the world of filtration



16

Interview with
Dr David Carmell,
BWA Water
Additives' CEO &
chairman



4

Industry News



8

Technology
News

Contents

• Editorial

In his editorial, managing editor Alan Burrows discusses the views of BWA Water Additives' CEO and chairman Dr David Cartmell.

• Industry news

All the latest news from the filtration sector.

• Technology news

Our overview of the latest technical advances and developments in the industry.

• Features

IFAT Germany previewed	14
Looking ahead to the high-profile exhibition in Munich during May.	
BWA Water Additives' boss speaks out	16
We interview Dr David Cartmell, CEO and chairman of BWA Water Additives, about the environment and the filtration industry's responsibility towards it.	
Filtration in nuclear decommissioning	20
Chris Chadwick and Adam Swain of Porvair Filtration Group's Nuclear Services Division put forward their views on some of the most important considerations for those involved in filtration in the nuclear industry.	
Filtration and sedimentation in clean water production	24
Ken Sutherland looks at the role of filtration and sedimentation in the production of safe drinking water, and of pure water for other purposes.	



14

Event Preview



24

Drinking & other pure water production



16

Water & wastewater



28

Process water

A new trend in mobile water treatment plant hire

Mark Dyson of Aquamove looks at on-the-move water treatment plants and their potential advantages to water treatment solution searches.

28

Rotary fibre disk filtration in the treatment of oilfield wastewater

Currently the Rotary Fibre Disk Filtration (RFDF) is the proven tertiary filtration system for municipal wastewater treatment, but applying RFDF technology to oilfield wastewater is challenging work.

32

• Applications

Vortex filters make cost savings at German hospital

A successful rainwater harvesting project using strong filtration technology has helped cut utility costs at a medical centre in Germany, writes architect Klaus Koenig.

36

• Diary Dates

48

• Product Finder

46

• Advertisers' Index

48

Dates to remember

- 4-7 March
Smagua, Zaragoza, Spain
- 19-21 March
AsiaWater, Kuala Lumpur, Malaysia

- 7-8 April
Global Water Summit, Paris, France
- 8-11 April
INDEX 2014, Geneva, Switzerland



BWA Water Additives

Inside the water world of a sustainable solution finder

Filtration+Separation interviewed Dr David Cartmell, executive chairman and CEO of BWA Water Additives, and asked him about the character of his company and its product launch at Aquatech.

BWA Water Additives' executive chairman and CEO Dr David Cartmell is passionate about his company's environmental work, and that its biodegradable credentials are strong – so much so that his philosophy is that BWA's products and their contact with the environment must go above and beyond the regulated levels set.

"If I was just taking a short-term, hard-nosed business decision, I'd say 'we meet the regulations, we'll sell the cheapest product we can, and try and get the most sales we can,'" he says. "But instead I believe I've got a responsibility as CEO of a good-sized chemical company, I want to do something for the environment as well as make money."

Dr Cartmell doesn't mince his words. Long-experienced in the water industry, he has helped BWA steer a path towards a stronger financial future with North American investors while keeping a refreshing, principled view on the company's work and on-going legacy.

"I think that there's more responsibility to business leadership than just making profit," he says. "We've got to take the industry forward, and I think having a better environmental profile is what people want. Ask the UK population what do you think we should do – make a little bit more money, or make our products a bit safer, not just safer but more acceptable to the environment? – and they'd go for the latter. That's how I think we

should be approaching our work, how do we achieve the long-term view, and our long-term view to me is a better environmental profile."

He believes if more companies in the sector adopted the same approach "things could move forward for the better, not just the water industry but for the whole chemical industry".

But what about his company, how does it operate?

"We're different," says Dr Cartmell. "We only sell to one market. We sell a whole range of products, but we only want to sell to one market, because we want to understand that market from top to bottom."

That specialisation is what his company is all about, he says; it is that and industry knowledge that sets BWA Water Additives apart from the others in this competitive sector, Dr Cartmell insists.

"We're a specialty water treatment chemicals company, and actually there's very, very few of those around, because most chemical companies are product-focused in that they sell a particular range of products, but sell it to a number of different markets.

"So most companies will say they are market-focused," he smiles, "but we truly are, because we're a single market-focused business, and that's our differentiation.



Dr David Cartmell: Wants to take the industry forward.

"Also, what most of our customers appreciate from us is a chemical '+' knowledge, because we know how to use our products in the market, and we can advise the customer."

The majority of the 'technology people' BWA employs in sales and marketing, he says,



Specialisation is what the company is all about, says Dr Cartmell.

come from the water industry, therefore Dr Cartmell suggests that the company knows its customers' needs very well.

"We're giving them a knowledge [bank] as well as 'the product in the drum', and that's why we're successful in what we do, and why people come to us."

Dr Cartmell says the company's success is due to this in-depth knowledge which can be called upon when problems occur in the water sector.

"If anybody has a problem in water, a real sticky situation perhaps, they call on us first, because we've got that technical leadership position in the market space, and the knowledge. That's what our goal is – to be the high performance, high knowledge-based, chemical producer."

BWA's business is concentrated in the water industry, but it is one that has implications for other sectors, Dr Cartmell explains. For instance, regarding scale that is found at the bottom of kettles in residential hard water areas. It is this, in an industrial size, that his company is tasked to prevent, he explains.

"If scale occurs in a massive plant, like a large desalination plant, or a cooling tower, or down an oil well, [the operator] is putting themselves in a difficult position, because it's pretty hard stuff, you want to prevent that.

"So we prevent that happening; we don't clean it up, we prevent scale from forming, that's the first matter to consider.

"Secondly, bacteria. We sell biocides, which kill bacteria such as legionella, that can

give you Legionnaire's Disease; or algae, the green slime, or general slime, but general bacteria.

"And then the third thing to look at is corrosion of steel, the corrosion of metals like mild steel, or even copper and brass.

"So, scale control, microbiological control, and corrosion are the three main product groups that we treat."

Target market

"Wherever water problems occur," states Dr Cartmell, "that's my target market."

These problems occur, for instance, in North Sea exploration.

"That's what our goal is – to be the high performance, high knowledge-based chemical producer"

"To get the oil out of the ground, you pump seawater into the ground," explains Dr Cartmell, "that's how it works.

"So basically, when that seawater goes in the ground, it's going to be heated up, it's under pressure, and it mixes with other water that's already down there, and that then starts the formation of scale.

"If you get the scale, like calcium carbonate or calcium sulphate, happening in those wells, all those millions of dollars spent drilling out those wells is going to be completely wasted.



BW Water Additives: An exceptional knowledge bank.

"But put antiscalant in the water, it will keep those wells clean, and that's what we're about as a company."

One of the other markets Dr Cartmell mentions is what he terms as the 'classic industrial water treatment market' – cities populated by air-conditioning towers, and desalination. This is a specialty for the company, and one that Dr Cartmell claims BWA is the market leader of in terms of selling chemicals into desalination globally, especially in the Middle East.

"Much of the Middle Eastern market is thermal desalination," he says. "Basically, you're boiling the water, you're boiling seawater and collecting the steam, but obviously in a vast plant that again can scale up in a matter of hours, or a day or so, without antiscalant.

"So we supply the chemicals that go into that, and we have about a 60% market share worldwide of that market, but most of that market is in the Middle East."

And the company is involved in reverse osmosis, or the membrane market which, significantly, due to global differences, BWA produces solutions for on an individual-problem-solving-basis, rather than developing bulk treatments.

"Everybody thinks H₂O is simply H₂O," Dr Cartmell explains, "but what gives all the problems is all the other stuff that naturally occurs in water, from dissolution of rocks, or calcium, magnesium.

"For example, seawater around Australia has got a much higher level of magnesium than



Much of BWA's research work centres on detectability in the environment.



The quest for biodegradability has taken the company on a five-year research path culminating at Aquatech.

most other parts of the world, therefore you get specific issues in Australian waters.

"Similarly, the south east of England has very hard water, which is very difficult water to control. In the Manchester area, you have very soft water, it's very corrosive, so again you need a different type of chemical completely to treat the water in Manchester than you

do in London, and so it can be that specific. And that's what we really spend a lot of time working on, is the understanding of that."

Great demands

From his global perspective Dr Cartmell has observed that the world's conditions are changing, and because there's more demand

for water, the quality of it is getting more difficult to treat.

This isn't the only matter that's becoming more demanding, he says.

"Because our product is in water and dissolves in water, it goes into the plants within minutes or hours, and then it goes back into the environment within hours, or at the most a day," he explains, "and it's not being consumed in a product, it's not being made into a product – it's actually going in the water. So it's our responsibility, and although it's not quite at a pharmaceutical level of diligence, it's getting close to it.

"Therefore the approvals that we get are absolutely critical, and in the research we carry out, one of the first things we look at is of course helping performance, but the second thing is, how safe is it and will it fit 'the market space?'"

Dr Cartmell reveals that much of BWA's research work centres on detectability, how well its products fit into the environment, and can they biodegrade.

That quest for biodegradability has taken the company on a five-year research path that was completed late last year at Aquatech when a range of biodegradable products under the Flocon brand was introduced.

"[We've developed] for the membrane plants, a product that goes in and prevents scale and calcium deposits, but, once it goes into the environment, it will biodegrade," he states.

"That is something that's quite unique. A few years ago, there was lots of biodegradable cleaning solutions launched for use domestically in kitchens – they were useless, but they biodegraded. We started on the other side of the process, which was that we wanted a product that will control scale to the highest performance we expect, but now we want to reverse-engineer biodegradability into it, and that took us, from concept to launch, almost five years."

It is this breakthrough that Dr Cartmell is perhaps most proud of, especially as the development has gone through stringent industry standard testing and come through the other side with a clean bill of health.

"Those in the Norwegian oil sector, for example – who are one of the more advanced in their thinking on environmental issues – they stipulate this particular test, and if you meet this, you get a gold standard. Our products have achieved their gold standard.

"All our products have got drinking water approvals, so none of them are dangerous to the environment anyway. People don't want products accumulating, so therefore the fact that it's benign to the environment, and it



Dr Cartmell says the company continues to strive to improve the environmental profile of its products.

breaks down quickly, then I think that's really what people should be looking for."

Dr Cartmell said the company continues to work hard to achieve more on the overall environmental profile of its products.

"It must be safe to handle, safe for the environment and easy to detect when in use," he says, "so we put that 'engineering' into it, if you will, adding to its value."

In terms of profile, BWA's products are higher priced than its competitors, but its customers understand this, Dr Cartmell says.

"Our products are, in general, 'higher performance', but then there's a premium to pay for that," he says. "So when it comes to the customers, there's clearly a portion of the market that will not pay a premium, because they're at the lower end of the market, and they're not too worried about their plant downtime and problems from scale and biological fouling.

"Our product isn't suitable for them, because if they don't need that high performance product, they aren't going to pay for it.

"But then there's a whole range of the market that likes to have the product they sell to the end user to be really effective," he enthuses, "and that's the customer groups that we have.

"So we have a very loyal customer base, because once people start using that higher performance product, they don't really want to move away from it."

Another characteristic of BWA's products Dr Cartmell wants to underscore is that they are all developed in-house, from the company's own research teams which, he proudly says, has been a continuous feature of the business over the last '25, 30 years'.

It's time to discuss briefly the company's history, and what its plans are for the immediate future.

"The business was created in 1973," he says, "and has been part of a number of large multi-national chemical companies.

"They were all multi-billion dollar chemical companies until, in 2006, I was able to buy out the business and take it independent with private equity.

"So we did a private equity backer buyout in 2006 with a UK PE firm, and then we did a secondary buyout in 2008 with a Middle East private equity group."

Then, in 2011, the company was given the financial backing from a private American family which Dr Cartmell is very happy about.

"It's a family investment company, which means that they take a long-term view, and we're in a very good position," he says.

"Since 2011, for the first time in many years, we've been able to take a long-term view to investment in technology, so we are looking at that three, four, five-year [product development] window."

Dr Cartmell says the company has now moved into a period 'great stability' which is allowing for more investment in technology than previously in its history.

Following its launch at Aquatech and its financial credentials, it is clear that BWA is a company to watch out for in the future. ●

www.wateradditives.com