

BioBond Adhesives – Focused on Eliminating Microplastics and Forever Chemicals from Coatings and Adhesives while Reducing CO₂ Emissions using Corn and Soy Bean Based Derivatives instead of Petroleum



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Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

CEOCFO: *Mr. McConnaughey, you are a seasoned executive and you like to work with startups; what attracted you to BioBond?*

Mr. McConnaughey: This is my fifth startup. Many startups go through what is called the startup valley of death. This is where a startup must develop a product prototype and before they can acquire larger amounts of funding they must have market traction but they need to have funding to gain market traction. Venture Capital typically want to have market traction before they fund a startup. It is kind of a circular reference, which is why a lot of startups fail. I think the number is 97% failure rate.

What attracted me to BioBond is that an investor fund called Generational Food Rural Partner Fund, part of Big Idea Ventures actually founded BioBond through licensing intellectual property from Universities. I was hired to derisk the investment thesis. They actually invest or provide funding all the way through the startup valley of death to market traction and beyond. BioBond was funded with enough money not only to create the prototypes but also to create the market. After four other startups, this approach solves this problem we have in the US that 97% of all startups fail. That is what attracted me to BioBond; it was the method in which the company was formed and funded addressing the startup valley of death.

CEOCFO: *According to your website "Biobond is Pioneering Plant-Based Material technology." What does that mean?*

Mr. McConnaughey: The problem is that the coatings and adhesives market is a \$190B global market, shipping over 100 billion lbs. of coatings and adhesives that are used in a variety of industries like construction, automotive, packaging, textiles, woodworking. Adhesives and Coatings are very necessary materials. The problem is that most of these coatings

and adhesives are based on petroleum today. They create pollution to the air, water, and soil, with microplastics, forever chemicals, and what they call VOCs, which include formaldehyde which is not good for us.

What we are doing is using corn and soy bean based derivatives to replace the petroleum in these products. Essentially there is no micro plastics or forever chemicals, no odor or VOCs (Volatile Organic Compounds). There are a lot of industries like the packaging industry that want to move forward to sustainability and circularity. These companies want better adhesives for the environment for a lot of different reasons, including getting rid of the microplastics.

We are here in the Midwest where they grow a lot of corn and soybeans. We also use tree nut oils in some other applications. This really makes sense because it creates circularity. It is better for everybody. Our adhesives and coatings are safer, healthier and better products to use and also better for the environment.

CEOCFO: *Would you tell us about the science and how you create the products, and how it is different from petroleum?*

Mr. McConnaughey: Petroleum is oil or natural gas that they get from the earth. They process it in these big refineries. To break it down into intermediates that can be used to make products like PVC or PEPs (Plastic Engineered Products), which is for water bottles. It is a very well-established industry.

"BioBond is accelerating the shift in the \$190B coatings and adhesives sector from petroleum-based products to a safer, sustainable, and circular future—eliminating microplastics and forever chemicals while reducing CO₂ emissions through a capital-efficient execution model." Marc McConnaughey

Over a number of twenty years, the AG tech business has made a lot of progress turning corn and soy into intermediates to replace petroleum. Ethanol that they put in gasoline is actually from corn, so this is not new. Instead of it coming out of the ground, you are creating a downstream market for farmers in the Midwest and breaking that corn down into intermediate that can be used to formulate into final products like coatings and adhesives. Take for instance the school adhesive we have, it is corn based, so it comes from a protein of corn. Corn has a number of proteins and that can be processed and made into an intermediate that we use to formulate with other materials to create a safe and healthy school glue that doesn't have microplastics, odors and forever chemicals. Simply that is what we do.

CEOCFO: *What products that are available today and what the response has been from the marketplace?*

Mr. McConnaughey: First we have protective antimicrobial coatings. These are floor coatings. When you go into hospitals, showrooms, and schools, they are refinishing the floors to keep them clean. All of those are petroleum based products. Most of them are still petroleum or solvent base. When they coat a floor, you have to leave because of the solvent smell; you can't use the facility for a day or two. What we have done with our coatings is they are all water based and partially plant based. There is no odor, so after you coat and it dries, you can use the facility immediately. You don't have that harsh smell. That has been extremely well received by contractors because during a hot day, they have to mask up because solvents are not healthy. Our coatings do not have odors so the contractors do not have to mask up. We actually meet the California standard for indoor air quality. This is a real win all the way from the contractor to the customers as essentially no VOC's, microplastics and PFAS forever chemicals.

We also do engineered solutions. Like the food processing and distribution industry, they must coat their floors according to the FDA. What we have done is engineer the floor coating to be antimicrobial so it resists mold, bacteria, and other microbial matter. This is a real win for these facilities because it can reduce or supplement cleaning costs. It reduces the change for these food recalls. In the news today, there was an issue about food wraps that have listeria. These recalls can cost as much as \$10 million dollars or more to a company. This is an area where these floor coatings can help in industries like food distribution and processing. We coated now over 50 thousand sq. ft with our coatings. We have a customer in Korea now and we are shipping into Mexico. The floor coatings are very competitive in price and performance. We spend around \$20 thousand per product, external testing against our competitors. We provide this data to our customers.

On the adhesive side, we have a school glue and a wood glue, and there is no odor. There is a common thread through coatings or adhesives. With coatings you are bonding to another surface, and with adhesives, you are bonding things

together; and the same principle of no odors or micro plastics. 50% of micro plastics in streams and oceans are from acrylic paints and adhesives. This is a real win for everybody, the environment as well.

CEOCFO: *What about your new Bio Melt?*

Mr. McConnaughey: We are traveling to Las Vegas this weekend to attend the well attended Pack Expo Show, which is one of the largest packaging shows. The problem to solve here is when you take that Amazon box and throw it away in a trash can, the box will degrade over time. However, the adhesive will stay in the landfill for 30 years. We solve that problem with our new BioMelt, hot melt products. They are biobased and they degrade along with the box. It is a big win. They are being introduced at the Pack Expo Show. It is a \$9 billion market.

We are also introducing pressure sensitive adhesive hot melts and hot melts for fake fingernails. There is a lot of applications and we think we can become a leader in this critical market where there is a real problem to solve and make these hot melt adhesives biodegradable.

CEOCFO: *What have you learned over time having worked in different industries, and with many different companies about standing out at a conference?*

Mr. McConnaughey: The way you stand out is sometimes not with a conference. If you are go to a conference, you want to be a speaker. You want to be selected as a speaker so that you can be in front of the audience and get your message out. You can hire a PR company so you can meet with editors of magazines to stand out more. There is so much noise at a tradeshow. I used to go to The Consumer Electronics Show. With 200 thousand people, it is very difficult to get your message out.

The better way to get the message out is to win awards. Submit your products to award-winning competitions. People want to see this on the internet. They will always type in the consumer reports, what is the best this or best that. Everybody wants to see the reviews before they shop online or go to the store. I was part of a company in which we built, that went from \$50 million to \$1.4 billion in sales, and we won over 1500 awards and that made a huge difference to make us stand out. That approach brings much more return than advertising or going to a tradeshow which can be quite expensive.

CEOCFO: *You mentioned funding. Are you looking for additional investment or partnerships?*

Mr. McConnaughey: Absolutely! If you are doing a startup, you should be raising money all the time. It never stops. You want to raise money when you don't need money, I have learned that lesson. If you look like you're starving, people see risk, so they don't want to invest and take that risk. We have raised \$6 million in a Series seed round. We are now raising our Series A round to go to market and expand our operations because we are shipping and creating revenue, which is a very critical stage of market traction.

We also can scale, so our supply chain is set up. This is a volume market. Over 100 billion lbs. are made every year in coatings and adhesives, so it is a volume market. We are going to use this next round of funding to expand our operations including sales and additional intellectual property. We have already filed 24 patents in less than a year. That is another critical part. Expand the team in operations and sales but also more intellectual property is what the use of funds will be in this Series A round.

CEOCFO: *Do you find that the current interest in food additives, petroleum additives, etc. transfers over into your area?*

Mr. McConnaughey: Standards are different around the world. They don't have these blue or yellow food dyes in other countries but in the USA we do to make food more attractive. It is not good for you. Finally, they have stepped in and said we are going to get rid of it in this country. Kraft, Heinz and many food companies have now announced that they are going to remove those dyes in the next year from their food. A lot of these foods are protein like, so it is similar to our business in many respects. We are doing the same thing, we are removing petroleum from coatings and adhesives and using plant based intermediates. You can use plant-based dye and still have colorful food. They don't have to use harmful dyes. Very good parallels with what is going on in food tech, is going on in material tech. It is great to see.

It is an exciting time and the timing is right. Ten years ago we didn't care about sustainability or using healthier or safer products. However, you still have to be careful in this market as consumers or businesses say they want sustainability but

will not pay for it. Your products have to perform equal to or better than petroleum products and you have to be cost competitive. They will not pay a penny more for a bio based product. That has been a problem over the last ten years and a lot of startups in food tech or AG tech have failed because they think they can charge a premium. A very good example is Impossible Meat. It didn't really taste like meat, they charged a premium and it didn't cook as well or as efficiently in fast food restaurants. That is a formula for failure, so we are very careful at BioBond to make sure that we perform equal to or better than petroleum products, that we cost equal to or less, and we work in existing production methods or production equipment that the industry have already in place. Then you will get the sustainability part, I guess you could say free.

CEOCFO: *What is the competitive landscape for BioBond Adhesives and the barriers to entry?*

Mr. McConnaughey: The adhesive area is an \$80 billion market worldwide and it is a concentrated market. The big companies control 70% of the market share, such as Henkel and 3M; these type of companies. It's a long sales cycle to break into that market. The issue is both in coatings and adhesives; the industry in general has been very slow to move to bio based products. They have reduced their R&D. They won't do it unless there are regulations. Also, these formulations may become too expensive or the underlying intermediates caused the price to go up. The market is only 2% to 3% penetrated by bio based products. When I make a speech I always ask how we can speed up. This can be done now. The core competency is in the intermediate, getting intermediates that are cost effective and perform in the formulation. Sometimes, it is not easy to make the formulation stable.

Our secret sauce is how to use standard intermediates, high volume, and formulate them to solve a problem in the market. I would say speed to the market is one of our advantages. I think some of the secret sauce in our formulas made the formula stable. Our CTO has 50 years of experience in formulation. Our CSO is just out of the university and he brings a lot of fresh ideas. I think we are quite capable technically and should get more and more respect as we move along.

The competition on the coating side is more fragmented. Only 30% of the market is controlled by large companies such as Sherwin-Williams or PPG. We see that market as low-hanging fruit. It is easier to enter the coating market and that is where we are getting our revenue from right now. We are solving a problem at the customer level with these engineered antimicrobial solutions. It is just not an everyday coating. The key here with this business model is speed to the market, performing products that are cost effective and work in existing systems or production systems, getting all the certifications that show they are safer and healthier. All our products are USDA BioPreferred Certified. They are also Quality Gold certified, which is a very big statement to have. We are also certified free of the PRFAS forever chemicals. I think we got a pretty good competitive position. You never know 100% but improve your price/performance every year to have a chance.

