

Company Name: Intermolecular, Inc. (IMI)  
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<<Unidentified Analyst>>

Good afternoon. Our next presenting company is Intermolecular. Presenting from the company is CFO, Bill Roeschlein. Bill?

<<Bill Roeschlein, Chief Financial Officer>>

Good afternoon. I'm Bill Roeschlein, CFO of Intermolecular, and thank you for joining us today. Moving quickly to Slide 2, just a disclaimer that there may be some forward-looking statements made under the SEC safe harbor provisions.

On Intermolecular, some quick fact about us. We are a leading provider of materials research services. We were founded in 2004 and we had our IPO in November of 2011. And last year we had revenues of \$47.3 million. Some of the competitive advantages that we offer to the marketplace include a world-class interdisciplinary team of scientists and engineers, a unique high throughput experimentation platform covered by more than 275 patents, a state-of-the-art development and characterization facility that allows for in-depth metrology, physical characterization and electrical characterization of materials, and a substantial history of successful development of advanced materials that are currently being used in today's semiconductor memory chips or will be in the future.

As many of you already know, materials are at the core of 21st century innovations today. Nowhere is that more evident than in the semiconductor industry where Moore's Law has been leading engineers to do more and more unnatural things to eke out better performance in today's semiconductor chips. And, it's not just semiconductors, we're also seeing this happening in places like alloys and LED substrates for instance. Nowhere, however, is the constant need for materials innovation greater though in semiconductors.

The need for shrinking die sizes have increased the complexity, the cost and the time required to produce the next generation of semiconductors. What used to be a handful of materials that were used in the 80's to create chips has now multiplied into dozens of different materials. And this has lead for service providers such as Intermolecular to offer services such as the fast screening of these material combinations, the ability to have a high throughput experimentation approach and also our ability to handle many of these complex and toxic material combinations.

As we see here, the conventional approach taken by our customers is often a process where one experiment will be performed at a time often on a single wafer in linear fashion. Internally, many of our customers also contend with limited R&D infrastructure for experimentation. They deal with a risk adverse manufacturing environment, which

often influences the outcomes and risk management issues relating to some of these potentially toxic materials.

What we do is we close the gap. Some other potential competitors to us might include academia and consortia government, and the end customers themselves and other equipment makers and material makers. The issue with academia and government consortia such as IMEC and Semi however, is that their services are available to a wide audience. And therefore they don't offer the same strategic advantages that Intermolecular can. In addition, the semiconductor equipment and material makers offer some material research services, but it's invariably tied within the context and bias of purchasing their own equipment. Material research services that Intermolecular offers, on the other hand, is both a strategic and unbiased asset.

Slide 8 here illustrates the difference. On the left side you can see how a conventional approach will take a single wafer, they'll perform some metrology, some physical characterization, electrical characterization and some modelling, and all of that becomes one cycle of learning which they then repeat.

On the right side you see how we, Intermolecular do it, which is where we take our patented equipment and workflows which allow from anywhere from up to 100 PVD experiments on a single wafer or up to four ALD experiments under a single wafer and that creates multiple cycles of learning within the same time period.

The company employs more than 65 scientists and engineers many of whom have advanced degrees. We utilize internally developed and patented equipment to perform what we call high productivity combinatorial experimentation along with internally developed and patented data analytics. And what we do is deposit multiple spots onto a wafer as opposed to one wafer and one experiment so you can have multiple spots and multiple experiments.

At a high level we provide four basic services here. On the left side our standard services consists of scanning abilities for material research which is the ability to scan and screen material combinations that may prove valuable, and search capabilities which is exploring material combinations to help identify best candidates for a given application. So our search and scan services tend to be shorter in duration and within the semiconductor ecosystem group of customers that we have.

On the right side of the screen you can see we also provide study services where we examine and analyze the material composition that's provided by the customer and solve where we deliver a material composition that satisfies a certain specification such as leakage, parasitic capacitance et cetera. So the bulk of our longer duration memory work comes from these study and solve type of services.

Within the semiconductor memory market, we're actively engaged with some of the world's leading memory makers. Within the NVM or flash market, we continue to develop advanced memories – advanced materials from memory cells and selectors, and

also have a deep understanding of both chalcogenides and oxides and the use within phase-change memory and other applications. We also have a long history of DRAM development and have been instrumental in shifting our customers with extending the maturity of this technology.

In addition to organic industry growth we see potential for geographic sales growth by expanding into other regions most notably China. We hired our first sales representative in China about a year ago and we believe this represents untapped market potential for Intermolecular. Currently a number of our customers are building factories and 3D NAND factories in China, and we're seeing that the impetus by the government to put money into consortia and academia within China in order to become semiconductor independent within the next 10 years as per the government mandate leaves us with a large amount of R&D opportunity there.

Investment Summary. On our last conference call we guided the second half of 2017 to flat to slightly up revenue-wise. The first half declines that we saw came primarily from the conclusion of several non-semiconductor programs and the completion of collaborative development arrangements with royalties attached to them which were part of our previous business model. And we also mentioned in our call we had a returning memory customer that is now just beginning the ramp all of which is expected to contribute to higher revenues in the second half and roll into a promising 2018.

Our balance sheet remain strong, we have \$27 million in cash and no debt, and our cost structure will support a revenue breakeven point of \$9.5 million, which we expect to achieve in Q4 of this year.

And I conclude my formal remarks. I'd be happy to take any questions if you have any. Yes, sir.

Q&A

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: Sure. In Q1 this year we had a restructuring to right size the amount of OpEx that we had dedicated towards the non-core semiconductor market which we serve. And as a result of that we've been able to lower our overall operating expenses and that's been able to contribute to lower breakeven point, but it's primarily the result of refocusing on our core strengths which are within the semiconductor and semiconductor ecosystem and reducing the amount of expenses that were associated with more of the activities outside of semiconductors.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: Sure. So about a year ago we hired our new CEO, Chris Kramer. And as a result of the strategic discussions at the board level we decided that the amount of investment that we had put into non-semi business and sales outreach with just not

capital that was being used as efficiently as it should. And so that's why we did a restructuring in Q1 to essentially reduce the amount of expenses they were associated with areas where we have strength, but where the new product development cycle isn't as quick turning as it is within the semi and especially the memory market. And so historically we have served areas like LED glass, we've also worked in alloys and we've worked in logic for instance.

But the amount of investment required to penetrate those areas just doesn't justify the investment. So at this point what we're focused on is our core strengths which are semiconductors, semiconductor ecosystem industry. We're focused on generating cash and growing our core business and then also expanding geographically into China.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: Yes, about half of those patents are around our HPC high productivity combinatorial approach. That's the reason we don't have a direct competitor in the market, because we have the patented equipment in data analytics that allow for multiple experiments to be conducted on a single wafer. And then the other half of our patents are around ReRAM, and ReRAM is another form of phase-change memory which is an emerging memory that we expect to be in the market at some point in the future, but this phase-change memory for instance Micron and Intel have a cross point which is sort of they call it the PCM phase-change memory.

And whether you use an oxide or a chalcogenide for PCM, it has promise in the sense that it would have lower latency and expect to have higher density. And so it could have potential in storage class memories, and we're seeing a lot of interest and we're actively working on R&D activities that are directed in this area. This is clearly on the road map for the industry as a whole.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: Well, the strategy is to not burn any cash but to grow cash, because the cash forms a nice floor obviously on the stock price. And then our expectation to increase enterprise value is going to be around cash generation and top line growth within the markets which we serve best. And so if we follow along those tenets, we believe that the company will grow nicely next year.

<Q>: Any other questions?

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: No, there is nothing new. I mean, that would be kind of outside of an area that we have worked on in the past. Substrates are important to LEDs and the color that they project in trying to get a natural color et cetera, but the – it's an example of where the product development cycle is different and a little slower than what you'd expect to see in the memory market. And so we still have – we have capabilities in that

area and we do focus on particular opportunities as they come up. But we don't have the kind of the heavy OpEx expense associated with trying to penetrate those markets and are being more strategic in about how we deploy our SG&A.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: No. Several years ago we helped to develop some wet chemistries that they're currently using in four different products. They pay us royalties and it's all dependent on how long the products last in the market. But judging by history there seems to be a fair amount of longevity to the product and so we will continue to receive royalties on that and expect to and we expect to for as long as I can tell.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: Steve, I mean, that's always a big common question, especially being a small cap company. So we don't have any direct competitor, so there is no natural fit of taking one plus one in having two and having a bigger market share. It is possible that a customer could be interested in us, but more often than not they use us to augment their services not to necessarily just to absorb us.

And then there's always potential, but, theoretical, that equipment makers may want to get more and more involved in material research, because they are already somewhat, it's not core, and so the core to what they do but it helps them with a lead, it gives them a leading indicator of where the market's headed so they can create the materials. I mean, if they know what the material sets are going to be, it's going to help with creating the right equipment to do the processing of the wafers. But that being said, we're not as natural of an acquisition target as you might see in other industries.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: So, yes, we had some choppiness as certain CDPs with royalty arrangements ended. And now we're having kind of upside choppiness where we're getting return business, returning customers, and customers I want to expand with new programs. And so that's what leading to the flat upward guidance for the second half of the year and our expectation that 2018 is looking promising.

<Q>: What's a CDP?

<A – Bill Roeschlein>: CDP is called Intermolecular collaborative development program. And under the model that the company used when they went public in 2011, the program services would often be more at a 40%, 45% margin and they would get a royalty or a percentage of the sales of the end product when it went to market. Eventually that met with a lot of resistance by a lot of customers especially when you're a large memory company or one of the largest companies in the world, your loath to want to pay royalties on anything. And so by eliminating the royalty model and having a program services

model where we have 60%, 65% margins, it really opened us up to more opportunities with companies that were not willing to pay any royalties.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: Sure. We developed some ReRAM or metal oxide technology with SanDisk, Toshiba about four or five years ago. And as we talked – as I mentioned in my discussion of emerging memories, there is – they’re trying to take the best of both worlds now with what DRAM offers in terms of low latency and what NVM flash offers with high density, and try to merge the best of both of them. And ReRAM or metal oxide is a sort of a phase-change where you can go from a solid to a non-solid state as are chalcogenide solutions.

But nonetheless both types of solutions by changing the structure from solid to less than solid is a faster switch than going from a positive charge to no charge in a typical transistor, and so that’s where you see the allure and the excitement about pursuing these future memories. So we have the ability to – if SanDisk, Toshiba produce a ReRAM product that uses our IP, we do receive royalties and we will, and we also have the ability to license it to other companies. And so obviously if that happens we will press release something on that.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: I don’t know. I mean, I don’t have that much – I don’t have as much insight into the customer’s roadmaps as what we can kind of read in the trade magazines. The current focus is in obviously 3D NAND in terms of manufacturing and then the future focus is in these PCM type of phase-change applications, specifically chalcogenides. At the moment chalcogenide solutions are the ones that we believe Micron, Intel are pursuing and that are of most interest.

There are some startups that are also doing ReRAM and that refer to our ReRAM patents than their own products. And so generally speaking somewhere in the 5-year to 10-year timeframe we would expect that PCM technologies of some flavor whether it’s ReRAM or chalcogenide-based to be a more dominant technology that’s out in the marketplace, and that’s the best I can answer.

<Q>: [Question Inaudible]

<A – Bill Roeschlein>: It would be tens of millions to even higher than that. But it’s all dependent on what our customers do and how they adopt it. Specific to SanDisk, Toshiba one of the challenges is with like Toshiba is they need to sort out kind of what they’re going to do in terms of ownership and they’ve got their own kind of situation that you’re trying to workout. Since we already have a license with them, it would be natural to expect that perhaps that partnership may explore something. But given the size of the market our royalty stream would be very, very significant. That said it’s extremely

difficult to predict kind of the direction of the market, and when the adoption rate occurs it's incredibly hard to predict that.

And people predicted the demise of DRAM for instance years ago and yet the DRAM has been around the 70's still has longevity and we're still extending the life of that. And NAND and 3D NAND they will have – they've extend the life of NAND by having 3D NAND. But one of the challenges of NAND in general is that there's only a certain amount of rewrites you can do on it before the memory goes bad. And so there's going to be a need for another solution if you want to have a storage class memory that has low latency.

<<Unidentified Analyst>>

Thanks, Bill.

<<Bill Roeschlein, Chief Financial Officer>>

Thank you.