

IN MY ELEMENT



“We’ve Created a Molecule That Will Make It into the Textbooks”

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Moritz Malischewski had to make a decision after graduating from high school in 2007. Should he study chemistry or music? He decided on chemistry. However, in his leisure time he still loves to play the piano and the organ

Carbon atoms can form exactly four bonds. At least that’s what the chemistry books tell us. This is a law that is carved in stone—supposedly. I say that because we’ve found an exception to the rule. My doctoral thesis supervisor, Professor Konrad Seppelt, and I have isolated a molecule in which a carbon atom is surrounded by no less than six bond partners. It’s called the hexamethylbenzene dication. This may sound very theoretical to a layperson, but for real scientists a discovery like this one is almost like the Holy Grail. Why? Because it expands our knowledge about the world and helps us understand it a bit better. That’s what basic research is all about. Because this special molecule is very unstable, it will never find any applications. Nonetheless, it enlarges our understanding of the chemical bonding behavior of the element carbon. I’m a specialist in inorganic chemistry, so it

was a coincidence that I happened to investigate the bonds between carbon atoms. While I was doing the research for my doctorate, I came across a paper written by a Dutch chemist in 1973, in which he postulated the existence of such a molecular structure but was unable to prove that it actually exists. I was curious to see whether we could create it with the technology we have today, so I started experimenting. Af-

ter many failed attempts, I wondered at times whether I would ever produce any results. Nonetheless, I persisted. I was determined to make my work pay off. I finally did find the proof, and that evening I left the laboratory grinning from ear to ear. Moments like these are what a researcher lives for. The fact that we succeeded demonstrates yet again that for every rule there’s at least one exception. You just have to find it!