

Portfolio

An impression of a few projects I worked on is below.

Feel free to reach out and discuss how my expertise adds value to your projects & team. I look forward to cooperating with you!

Bram Van den Broeck | Product development & innovation
+32 (0) 495 705 956 | b.vandenbroeck@ikonoblast.be

Rotational molding

Development of an innovative casing system for transporting & stacking drums and their hardware



EMD Group NV
Product developer
2003 - 2005

IP
Case Stacking System
Inventor
EU-patent

'Staggcase' put 'Stagg' in the high-end segment and contributed to stronger brand identity. Proving convenience & sturdiness during international tours, 'Staggcase' became the go-to choice of several international celebrity drummers.

Aiming to create a next-level casing line, I designed this product range packed with innovative features that boosted usability and invented its patented interlocking stacking system. As first-in-market, 'Staggcase' introduced vertical & horizontal interlocking case-stacking to enhance transportability, built-in wheels & extra handles on the larger-sized cases, and inter-stackable hardware cymbal cases. Competitor brands, later on, adopted some of these handy features.

In the context of a joint venture between EMD GROUP & its Chinese partner, a new rotational molding facility was built in Foshan, dedicated to 'Staggcase'-manufacturing. For the 'Stagg' brand and other OEM brands, I developed several ro-to-molded cases manufactured in Foshan's facility.

Expertise

- Market research. Competitor analysis. User & usability analysis.
- Concept & ideation.
- Industrial design. Product development. Component engineering.
- Rhinoceros 3d. Solidworks.
- Rotational molding. Injection molding. Over-molding.
- Project management. Target costing. Supplier Sourcing.
- On-site production follow-up & QC @ EMD's Foshan factory.



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Printed sensor & IP

Development of an innovative printed sensor coating that digitizes strain & deformation of a percussion surface



Ikonoblast BV

Smarthead Innovations BV

Client
2013 - current

IP

Printed Sensor
Sensor Interface
Inventor

BR - US - CN - JP - MX - EU -patents

The 'Smarthead-sensor' is an ultra-thin, printed sensor-coating that quantifies a membrane's strain & deformation without affecting its acoustic characteristics or mechanical behavior. 'Smarthead' consists of 3 main components: sensorized acoustic drum heads/sensorized electronic pads, an electronic interface to analyze sensor signals, and digital/analog output data; to be used for tuning, multi-zone triggering, practice, amplification & recording applications.

I patented Smarthead's concept in 2011 to attract VC and external funding, aspiring to create a future-proof, digital-acoustic percussion surface. With personal funding, I focused on developing a 1st & 2nd generation proof of concept in co-creation with a multi-disciplinary R&D team. In 2013, Smarthead Innovations BV saw the daylight, and additional capital powered further R&D.

Together with venture capitalist Rasser | De Haan, Smarthead deployed a patent licensing strategy and executed a feasibility study focusing on sensor-manufacturing & signal analysis, together with Evans & Remo, to validate commercialization feasibility.

End 2017, I acquired all shares of Smarthead Innovations BV and its IP.

Expertise

- Market & trend analysis. Business development. IP licensing strategy.
- VC fundraising. Subsidiary fundraising.
- Manufacturing-feasibility study. Signal analysis-feasibility study.
- Co-development with multi-disciplinary technology partners, like: PEM, IWT, Flanders Make, Sirris.
- Prototyping executed with leading manufacturers like Remo and Evans.
- 360° project management.
- Onset-analysis. Spectral-analysis. Technology development.
- Printed electronics.



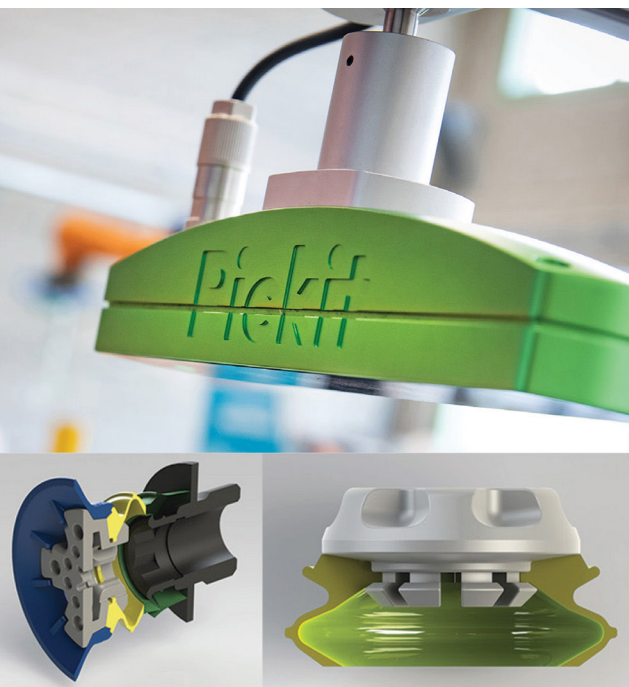
Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

CNC & manufacturing

Development of all mechanical components of a 3D camera that gives robots eyes to automate the 'pick & place' process in production lines



Ikonoblast BV

Pickit NV

Client
2017-current

IP

Case Stacking System
Inventor
EU-patent

Pickit is a versatile plug & play system that consists of a 3d camera, AI-vision software, and a dedicated industrial processor that runs it. Pickit is a one-stop solution in automation that makes production lines flexible.

To best-fit Pickit's plug & play philosophy, I focused on boosting production line-integration ease while developing its products. To this end, I created an integrated self-supporting & lockable ball-joint allowing for full 3d orientation while remaining compact. Various complementary flanges, brackets, and adapters fitting the ball-joint were made to robustly connect the camera to various types of commonly used robots and production line-profiles. Over the years, I took care of several component revisions, created technical documentation, and designed graphics like Pickit's original logo.

My responsibilities cover the full project-trajectory: concept design, mechanical component design & prototyping, optimization for assembly & manufacturing, supplier sourcing & manufacturing in China, troubleshooting, on-site PC & QC, import & delivery of the finished goods.

Expertise

- Business development. Business negotiations. Supplier sourcing.
- CNC. Anodizing. E-coating (CDC). Polishing. 3d-printing.
- Mechanical component design. Prototyping. Optimizations for assembly.
- Product development. Component design. Cost control.
- Technical documentation. Branding & graphics. Logo design.
- Multi-disciplinary project management.
- Manufacturing follow-up. On-site QC. Supply chain-handling.



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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Injection molding

Mechanical design, styling, and manufacturing optimization of injection-molded components of consumer electronics, and other consumer goods



Ikonoblast BV

Cherub Technologies Co., Ltd.
Pars Pro Toto BV
Clients
2012-2015

I developed injection-molded enclosures and components for leading Chinese OEM/ODM manufacturers of electronic consumer goods & accessories for the music industry, like NUX and Cherub. Similarly and subcontracted by Pars Pro Toto, I developed a food-container range for Belgian pet-industry accessory manufacturer Moderna.

Independent of the client or manufacturer, my responsibilities covered the different stages of their product development trajectory: conceiving concepts, styling, mechanical design, and readying parts for tooling. Many designed components exploit technical gimmicks inherent to injection moldings, like snap-fits, hinges, studs, welding areas, flanges, inserts, integrated buttons, concealed parting lines, reinforcement ribs, component-mounting structures, and built-in supports.

I value close cooperation with toolmakers & suppliers to execute design revisions based on prototyping and pilot runs and further optimize the parts for assembly and manufacturing. These co-created optimizations translated into competitive retail pricing that contributed to the product's commercial success.

Expertise

- Supplier sourcing. Tooling follow-up. Prototyping. Pilot runs.
- Injection molding, over-molding. (PC/ABS/TPE/PE)
- Surface finishes & coatings. Ultrasonic welding.
- Product design & styling. Mechanical component design.
- Product development. UX + interface design. Technical documentation.
- Optimizations for assembly & manufacturing. Cost control.
- Multi-disciplinary project management. (PCB development + Assembly line)

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Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

App UI/UX development

Development of an advanced drum tuner algorithm and app that empowers users to tune drums with their smartphone



Ikonoblast BV

EXALTD Co., Ltd.
Client
2013 - Current

IP
Drum tuning method
Inventor
BE - US - patents
CN- pending

Drumtune PRO is a one-of-a-kind drum tuning tool for iOS and Android, created for EXALTD Co., Ltd.

This project spans 9+ years of development. Since its first release, the app has introduced several innovative features as first-in-market.

The core technology of the app consists of a proprietary drum tuning algorithm, which I invented and patented.

I conceived the app's concept and structure on a limited budget.

With this, I was responsible for designing all app features, creating its UX & graphics, developing the UI screens, taking care of troubleshooting, web design, copywriting, and handling customer support.

Ikonoblast outsources different sections of the app's coding to specialized development partners in Belgium, the EU, India, and Pakistan; and manages the development process on behalf of EXALTD Co., Ltd.

This fruitful cooperation led to acquiring international project management experience in software development.

Expertise

- Spectral Analysis. Algorithm development.
- App development. (iOS/Android)
- R&D. Concept development.
- UX-design. UI-development. Graphic design. 3d-animations.
- Customer support. Technical documentation.
- Multi-disciplinary project management.
- Patent writing. Claim writing. IP & Licensing strategy.



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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Drafting appliance

Development of an innovative drafting-appliance, aiming to cool beer from ambient temperature to draft temperature quickly and better preserve its freshness



Ikonoblast BV

Verhaert NV
Client
2015 - 2016

As a mechanical design consultant for Verhaert NV, I was a member of the in-house AIC-team (Appliance Innovation Center) responsible for developing an innovative beer-drafting appliance for AB InBev. As a team member, my responsibilities involved contributing to its structural design and developing components of the appliance's HE-system, framework & housing parts.

I helped the team with researching solutions to optimize thermal insulation, moist & condensation control, and heat transfer by selecting materials including surface design/finish. I also researched minimizing the appliance's ecological impact and optimized parts and structures for assembly & manufacturing.

I supported the team by researching the usability & UX of different concepts and designing parts to meet human factor specifications & international food & safety regulations. Hereby, my responsibilities were creating user-friendliness, reducing handling-time, safeguarding hygiene during handling & servicing, smoothing the appliance's servicing & maintenance flow.

Expertise

- Human factor engineering. FDA/NSF standards. HE-design.
- Mechanical design. Usability design. Structural design.
- Development of a less recreational view on beer drafting.
- R&D. Concept development. Supplier sourcing. Prototyping.
- Sheet metal forming. CNC. Powder coating. Lathing. Milling.
- Customer support. Technical documentation. Presentation.
- Multi-disciplinary team member.



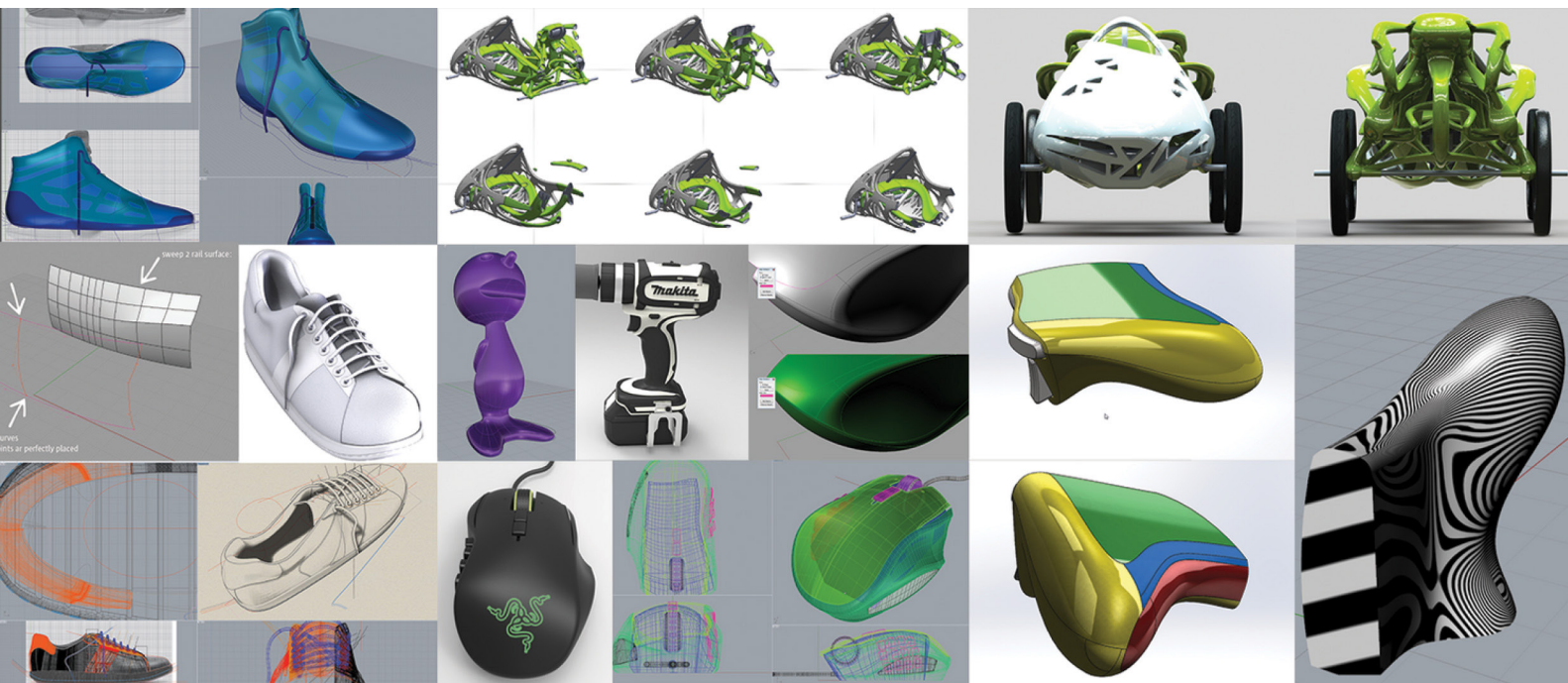
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Product development & innovation
b.vandenbroeck@ikonoblast.be

CAD lectures/workshops

Lecturing class A surfacing techniques with NURBS & coaching hands-on practica to sharpen CAD skills and boost design freedom



Ikonoblast BV

University of Antwerp (UA)

Lecturer

Thomas More Hogeschool

Client

Artesis Hogeschool

Visiting professor

2011 - 2014

For the Artesis Hogeschool and the University of Antwerp, I designed practica and taught CAD lectures (8h-weekly) to bachelor & master level students in product development.

The main focus of the lectures was on 3d modeling and surfacing techniques with NURBS-based CAD modelers, like Rhinoceros3d and SOLIDWORKS.

The lecturers introduced the basics of 3d modeling to gradually flow towards teaching advanced class-A surfacing techniques throughout the course.

Complementary, I assisted with a car design and a furniture design workshop as CAD lector, and coached weekly practica that studied exemplary cases to sharpen the students' CAD capabilities and boost their technical 3d surfacing knowledge, which helped students improve their surface modeling knowledge with NURBS for commercial products.

My overall 'coaching-take' on the practica was to 'motivate & push' the students to stimulate their design freedom with NURBS by handing-off surfacing insights that reduced their dependency on the typical limitations of commonly used, go-to CAD features.

Expertise

- Teaching. Large group practica. Lectures/Class dynamics.
- Product styling. Class-A 3d surfacing techniques.
- Rhinoceros 3d. SOLIDWORKS.



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Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

CNC & woodworking

Development of an electric double bass & electric violoncello as deal-breaking, yet quality instruments, comprising their stands & bags



EMD GROUP NV
Product developer
NPD&D dept. manager
2007 - 2008

The EDB/ECV project involved completely redesigning an electric double bass and violoncello series to meet a sharp EXW cost. This entry-level instrument series sells well worldwide due to its sleek looks, rich sound palette, and excellent price/quality balance.

For EMD, I managed the entire development trajectory, ranging from the initial design phase, over component engineering & prototyping, until the pilot run & QC. My responsibilities covered: the conception, the styling, and the mechanical design of all components of the different instruments in the series (excl. PCBs), including the creation of their accompanying stands & bags.

To reach the target cost, I designed an innovative uni-body with a one-piece neck and headstock, which, together with a full-contact tailpiece and a height-adjustable bridge, optimized the transfer of vibrations and resonance.

The looped piezo element underneath the adjustable bridge ensured frequency response suitable for bowing and plucking. Special in-house sound-engineering attention went to the onboard PCB filter-tuning, dialing them into that spectral sweet spot for bow playing.

Expertise

- Product development. Industrial design. Styling.
- Stand & soft bag design.
- Injection molding. CNC. Woodworking. Lathing. Lacquer coating.
- Powder coating. Tube welding. Cold forming. Sheet forming. Die casting.
- Target costing. Optimization for assembly.
- Prototyping.
- Technical documentation. Full-project management.



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Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Soft goods & bags

Fortify brand recognition & market share by unifying the look & feel of entire bag lines for string, wind, keys, percussion instruments & their accessories



EMD GROUP NV
Product developer
NPD&D dept. manager
2006 - 2010

Stagg's soft bag lines for string & wind instruments, keyboards, percussion instruments, 19" racks, accessories, and hardware were redesigned with a uniform style & to strengthen Stagg's brand identity.

I created 'style, construction & design templates for different price ranges to boost brand coherence throughout all redesigned bag lines.

Every bag line represented its unique level of finishes & features and was manufactured at different premises and price levels. Hence, the creation process of the bag lines required close cooperation with several Asian suppliers. Hereto, fabrics, molded handles, rivets, zippers, straps, buckles, reinforcement foams, meshes, pads, bumps, reflective strips, name tags, loops, trolleys, wheels, eyelets, and zipper pullers were sourced or custom designed.

With this, the challenge was successfully implementing the bag lines' design & construction specs at the different facilities to meet their target EXW cost while keeping supply chain logistics smooth and quality within scope.

Expertise

- **Soft goods design. Construction. Injection molding. Material selection.**
- **Styling. Concept development.**
- **Target costing. Component sourcing.**
- **Technical documentation.**
- **Prototyping. On-site QC & project follow-up at the suppliers.**
- **Overall design trajectory-management.**



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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Hardshell cases

Development of hardshell cases to boost brand coherence by unifying the design language per instrument family



EMD GROUP NV
Product developer
NPD&D dept. manager
2004 - 2009

Over several years, I developed various hard-shell cases for instrument families like string & wind instruments, keyboards, and percussion instruments. I also designed cases for 19" rack equipment, accessories, and hardware stands.

Depending on the case (pun alert), I designed specific hardware or sourced COTS with the manufacturer or supplier.

I created an inter-stackable case line for wind instruments to facilitate transport and provide stacking options for an entire orchestra section. Most cases had custom injection-molded PS inner-shells with lining. These inner shells were made up to EMD's design specs in co-creation with different instrument suppliers to perfectly fit and protect their particular instrument model inside.

With the exchange of the inner shells of the cases, the same outer surfaces could host various instruments in the same transport volume. This approach kept the cases' production cost lower, as fewer different external shells could offer a complete series.

Together with nesting and telescopic designs, this helped keep logistics lean and transport costs low and attain sharper retail pricing.

Expertise

- **Hardshell design. Roto-molding. Vacuum forming. Thermoforming.**
- **Mechanical component engineering. Styling. Concept development.**
- **Target costing. Component sourcing.**
- **Technical documentation.**
- **Prototyping. On-site QC & project follow-up at the suppliers.**
- **Overall design trajectory-management.**



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Die casting & CNC

Development of innovative drum hardware lines while gradually growing product quality, with the increase of the suppliers' manufacturing expertise



EMD GROUP NV
Product developer
NPD&D dept. manager
2005 - 2012

For 'Stagg,' EMD's in-house brand, several drum hardware stands, pedals, extension clamps, and racks were developed.

The most innovative project involved creating three entire stand series covering budget-class, mid-range, and high-end price ranges. Logic feature increase & style affinity between the various ranges resulted in a solid & coherent brand image for the product family.

I laid down the concepts and was responsible for managing the development. Hereto, I prepared its milestones and took care of the team's daily work planning & follow-up.

Hundreds of die-cast, injection-molded, sheet metal formed, lathed, milled, and laser cut extruded components were designed for all series, accounting for several years of development with the entire team.

On-site visits and QC allowed to revise & ready the parts for manufacturing. In close cooperation with the Chinese manufacturer and product development team, I followed up on prototyping and supported tooling optimization on EMD's behalf.

Expertise

- Die casting. Injection molding. Sheet metal forming. Lathing. Milling. CNC.
- Mechanical engineering. Component design. Styling.
- Target costing.
- Technical documentation.
- Prototyping. On-site QC & project follow-up at the suppliers.
- Overall design-trajectory & design-team management.



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Milling, lathing & CNC

Development of a slick and innovative direct-link driven pedal with a compression spring as part of a series covering Tanto, Wakizashi, and Katana models



Ikonoblast BV

Exaltd Co., Ltd.
Client
2017

'KATANA' is an innovative kick drum pedal series created for EXA. The lightweight anodized aluminum pedals feature ultra-fast lever action and a slick stealthy style.

The pedal looks sleek yet subtly equips full-fledged model features. The footboard & beater are fully adjustable. The beater head fits different weighted parts to adjust its mass and can rotate, tilt, and change in height. Thanks to its ergonomic placement compared to a classic mechanism, the ergonomically placed tension adjuster is easily accessible.

I went for a radical, innovative redesign of the classic mechanism to boost pedal speed, using a compression spring to drive the rotating parts over a fixed axis with minimal rotational inertia.

The energy required to initiate & invert rotation is reduced significantly, which gives the pedal a 'light feel' and 'instant responsiveness' for faster blast sequences.

Like a katana, this pedal strikes its target lightly, fast and precisely...

Expertise

- CNC. Anodizing. Lathing. Milling. Duplex Coating. Plating. Bead-blasting.
- Styling. Mechanical design. Concept development.
- Target costing. Supplier sourcing.
- Technical documentation.
- Prototyping. On-site QC & project follow-up at the supplier.
- Overall design trajectory-management.



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Over-molding

Development of 'Cymlok,' a quick set cymbal nut that secures cymbals on their stands with a button-operated, spring-loaded internal locking system



Ikonoblast BV

Exaltd Co., Ltd.
Client
2010-2012

Cymlok is part of a range of quick-release items designed for EXA. Other items in the same series include a quick-release microphone clamp and quick-set clamp adapters with integrated shock mounts to absorb contact noise during recording/amplification.

To fit EXA's goal to create items that simplify life, I focused on increasing usability and designed a quick-release mechanism to replace wing nuts. This button-operated mechanism has spring-loaded threaded clamp areas that firmly grip onto a threaded rod of a microphone stand or a cymbal stand from opposite directions.

This easy-to-use mechanism simplifies handling and further reduces the set-up & tear-down time of gear.

On behalf of EXA, I handled the entire process, from idea to sales and distribution. My responsibilities included: conception & product development, logo, packaging & web design, copywriting, technical documentation, sales & distribution, customer support, export, product photography, component engineering, supplier sourcing, purchasing, negotiations, on-site QC, etc.

Expertise

- Injection molding. Over-molding.
- Concept design. Styling. Mechanical component engineering.
- Target costing. Supplier sourcing. Prototyping. Tooling. Pilot-runs.
- Technical documentation. Packaging & logo design.
- Visualization. Photography. Web design. SEO. Copywriting.
- On-site QC & project follow-up at the suppliers.
- Product sales. Distribution. Import/Export.
- Full-project handling & management. Contracts. IP.



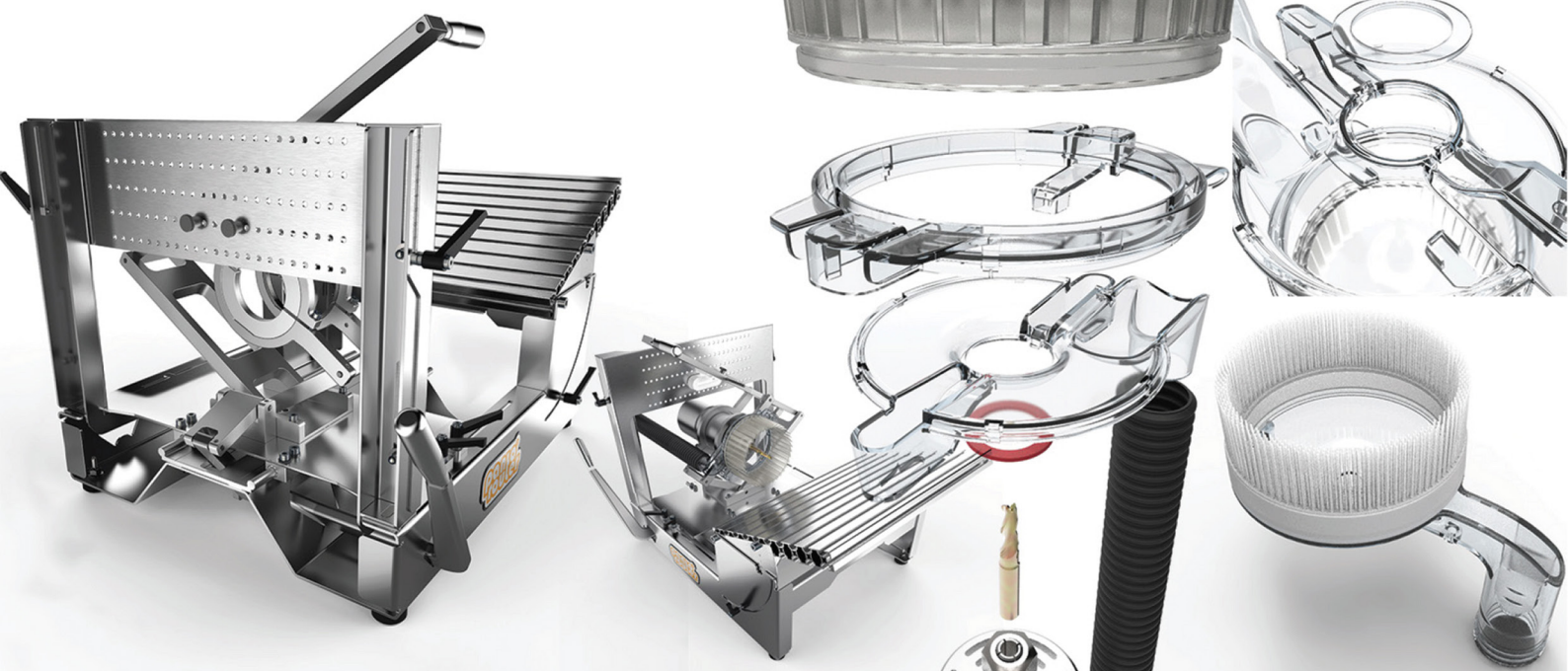
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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Mechanical design & visualization

Development & visualization of components for 'Hybrid PantoRouter,' an innovative milling machine that simplifies producing fitting wood-joints



Ikonoblast BV

SLC BV

Client
2016

'Hybrid Panto-router' is a machine to copy-paste or scale templates and mill them into workpieces allowing the creation of fitting positive & negative joints consistently and repetitively.

I designed a vacuum cap add-on to increase comfort and reduce milling debris in the workshop environment.

To ensure the add-on was easy to work with, clean, and remove for mill/bit changes, I developed a see-through 3-piece vacuum cap rocking a removable top with interchangeable silicone brushes limiting the outflow of milling debris.

One brush type features delicate, flexible cones. The other type has a laminar fin structure that is translucent to increase the visibility of the workpiece during milling. Both types easily are removable via a subtle press-fit for (dishwasher-safe) cleaning or replacement.

Magnetic snaps allow fast removal of the top part and its brushes from the vacuum cap to clear access to the spindle for convenient mill/bit changes.

Next to the injection molding parts design, my further consultancy responsibilities included creating 3D visualization and providing advice to enhance the machine's structural rigidity during prototyping.

Expertise

- User & usability analysis.
- Industrial design. Product development. Component engineering.
- Injection molding. CNC. Sheet metal forming. Anodizing.
- Product visualization.
- Prototyping.



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

CNC & woodworking

Development of 'musical instruments and components thereof,' involving the creation of headstocks, bodies, necks, saddles, bridges, ...



EMD GROUP
Product developer
NPD&D dept. manager
2004-2010

To create an entry-level 'look-alike' that lets beginning musicians play a similar-looking instrument as their idols, many 'Stagg' guitars mimic iconic guitars of renown brands, minus the price tag.

For multiple classical guitars, electric guitars, and bass guitars for EMD's in-house 'Stagg' brand, and its other sub-brands, I designed various headstocks, bodies, necks, saddles, bridges, etc

Developing economic alternatives that evoke the iconic guitars' sound & feel and meet their technical specs without infringing on their protected design elements was the goal of these design projects.

My project responsibilities included designing the instrument's parts and assisting with the follow-up on their prototyping before they hit the shelves.

Expertise

- Market research. Competitor analysis. IP.
- Styling.
- Industrial design.
- CNC. Woodworking. Lacquer coating. Finishes, inserts & bindings.
- Prototyping. Optimization for manufacturing.



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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Consumer electronics

Development of 'monolith,' an innovative folding e-drum that offers ultimate positioning freedom and a trigger-able module



Ikonoblast BV

NUX Co., Ltd
Client
2014

'monolith' Is a fold-able electronic drum kit created for a leading Chinese manufacturer, NUX.

Much design effort went into minimizing the time and the number of handling steps required to unfold the kit to a previously set playing position from a compact transport volume.

The project boasts several innovative features that enhance usability. The drum brain's elastomer edge doubles as a trigger-able pad thanks to built-in sensors and has an integrated smart-device holder. All rack clamps firmly engage with the rack tube's grooves when locked by a single bolt. When the bolt is unlocked, the clamps slide, rotate, swivel, and tilt on an integrated elastomer ball, creating unseen freedom to position pads and cymbals ergonomically. The elastomer material of the ball further absorbs vibration energy to reduce contact noise and avoid cross-triggering. Yet, it grips tightly around sealed and concealed cable gutters incorporated into the extruded aluminum rack tubes to run the signal cables clutter-free.

After the hand-off of the project's mechanical design concept, final engineering and target costing were taken care of by the NUX engineers.

Expertise

- **Market research. Competitor analysis. User & usability analysis.**
- **Concept & ideation. Mechanical component design. Interface design.**
- **Industrial design. Product development.**
- **Die casting. Injection molding. Sheet metal forming. CNC.**



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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Die-casting

Development of 'OEM Drum kit parts & hardware.' Nothing too fancy, just decent state-of-the-art, for the price range, with a few minor improvements



Ikonoblast BV

Glamor Music Co., Ltd. (Gretsch & Odery)

Client
2015

'Glamor' is a Chinese hardware and fasteners manufacturer, which is also an ODM supplier for renowned drum brands like Gretsch & Odery.

Glamor contracted Ikonoblast to develop a range of injection-molded, die-cast, sheet metal parts.

For their OEM & ODM/branded 'drum kits', I created a range of suspension brackets, tom mounts, floor tom leg brackets, single-sided & double-sided lugs, wing nuts/rods, drum keys, kick drum clamps, center brackets, kick drum leg stoppers, gaskets, bumpers, and single & double tom-holders with L-brackets & ball joints.

For an OEM travel kit, I created a system that opens the kick drum's shell to store the toms inside of it for transport. The sliding system also allows the drum's shell-depth adjustment to modify the interaction between the batter head & the resonant head; for a 'boomier' or a 'drier' kick drum sound.

Based on Glamor's feedback, the parts were optimized for manufacturing & assembly to attain a sharp EXW cost.

Expertise

- User & usability analysis.
- Concept & ideation. Styling. Product development.
- Industrial design. Mechanical component design.
- Die casting. Injection molding. CNC. Lathing. Milling. Sheet metal forming.
- Project management.
- Target costing in co-creation with manufacturer.



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+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Mechanical design & visualization

Development of a redesigned old-school effect pedal, rendering it more versatile & cost-effective



EMD Group NV
Product developer
2005

For EMD, I developed a universal effect pedal casing concept fitting different PCBs.

Firstly, I standardized PCB layouts for their inputs, outputs, power line, LED, and potentiometer placement.
Next, I designed the casing so that its tooling allows interchangeable die-inserts with retractable pins that follow different hole templates for the quantity of the potentiometer shafts and used components on a PCB.

Using different die-inserts for different production runs makes a variety of other effect pedals producible with a single mold.
This approach allows cost-effective manufacturing of the entire pedal series and keeps EXW pricing sharp as the tooling investment spreads over a more extensive product range.

Add-on plates in unique colors & prints complete the casing to discretize the individual products in the series.

This project was a product redesign that answered EMD's market reality, offering end-users a complete and robust product range at sharp pricing with minor usability improvements and clean yet recognizable looks.

Expertise

- **Market research. Competitor analysis. User & usability analysis.**
- **Concept & ideation. Industrial design. Product development.**
- **Component engineering. Die casting. Sheet metal. Injection molding. Over-molding. Powder coating.**
- **Project management.**
- **Target costing.**



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Mechanical design

Development of a myriad of stands for various applications, compact when folded, and robust when deployed in set-up



EMD GROUP
Product developer
NPD&D dept. manager
2003-2012

I developed a wide range of entry-level stands to support EMD in conquering its spot next to the leading brands by brokering price-breaking quantity deals on their Stagg-branded product range.

Over the years, I helped optimize the designs of several stands or created new ones to complete the product range. Some were very basic; others were more innovative in their approach. Creating a customized range of standardized stand components, like knobs and support feet, boosted Stagg's brand coherence, establishing a more solid brand identity throughout the product range.

Projects designed in Brussels were prototyped & readied for production in short sprints in China with the Chinese suppliers' and manufacturers' involvement. On-site revisions optimized the stands for manufacturing.

Creating these products was a game of achieving entry-level pricing and maxing out the quality attainable within the targeted EXW cost at the different suppliers. With this, cost control was quintessential, and co-creation with the manufacturer(s) and stakeholders via on-site prototypes proved fruitful in stabilizing product quality.

Expertise

- Market research. Competitor analysis. User & usability analysis.
- Concept & ideation.
- Industrial design. Product development. Component engineering.
- Sheet metal forming. Injection molding. Laser cutting. Welding.
- Profile extrusion. Powder coating.
- Project management. Target costing.
- Regular on-site production follow-up & QC @ suppliers' factories.



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Integral product design

Development of 'DT-10,' an innovative, one-button drum tuner that applies laser focus for ease of use



Ikonoblast BV

Cherub Technologies co., Ltd.
Client
2012-2013

IP

Hoops Clamping Mechanism
(Actual) Inventor
CN-patent

Cherub, a world-leading instrument tuner manufacturer, contracted Ikonoblast to design a high-end drum tuner. I handled the entire concept-design process: concept development, component design, packaging design, segmented LCD design, UI-behavior design, and offered to consult on the algorithm & IP.

During the initial concept design phase, I focused on user experience.

To simplify the tuning process, I invented the patented button-operated clamping mechanism that automatically activates the device when clamped onto a drum hoop and designed a one-button tuner interface and its operational flow. I also conceived a simple LCD-UI with changing backlight colors and segment animations to indicate the drum key's tuning direction and show whether the instrument is in tune or not. I created the DT-10 with an industry-first USB-chargeable Li-Po battery to spare the user from frequent battery replacements.

In a second phase, I provided on-site consultancy to revise the parts' designs for manufacturing in co-creation with Cherub's skilled engineers.

Expertise

- Market research. Competitor analysis. User & usability analysis.
- Concept & ideation. Mechanical component design. LCD design.
- Industrial design. Product development.
- Die casting. Injection molding. Sheet metal forming.
- UX & UI > Firmware behavior design. Packaging design.
- Project management. Target costing. Optimization for manufacturing.
- On-site design follow-up. Prototyping. Pilot run & QC.



Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Folding interior door-line

Development of 'Shuffle-a-way,' an innovative folding door-line featuring sleek profiles and robust architectural hinge & handle accents



Ikonoblast BV

Indoor Collection NV Porta Pivot & Anyway Doors

Client
2020-2021



IP
Undisclosed
Inventor
BE-patents pending

Anyway Doors & Porta Pivot are market-leading brands offering high-end interior door solutions.

Ikonoblast developed a folding door-line as an addition to the current pivoting door-lines available within the Porta Pivot & Anyway Doors collection.

The folding door-line is a unique innovation as it can open the door left or right and slide a stack of door panels anywhere in the frame to create an open floor surface and free circulation between rooms without a bottom rail.

Hidden mechanisms ensure clean looks, as no technical elements are visible on the outside, whether the door is open or closed.

Anyway Doors' & Porta Pivot's core teams evaluated several design concepts before picking one to finalize. I was responsible for the entire design process from concept development, component design, prototyping, and the readying of the part design for manufacturing.

Several technical solutions of the door-line I invented are patented or pending.

The contemporary design received both an Iconic Design Award and European Design Award.

Expertise

- **Concept & ideation. Mechanical component design.**
- **Industrial design. Product development.**
- **Die casting. Injection molding. Extrusion. 3D printing. CNC-milling/lathing.**
- **Target costing. Supplier sourcing.**
- **Optimization for manufacturing with # suppliers.**
- **Prototyping. Pilot run & QC.**



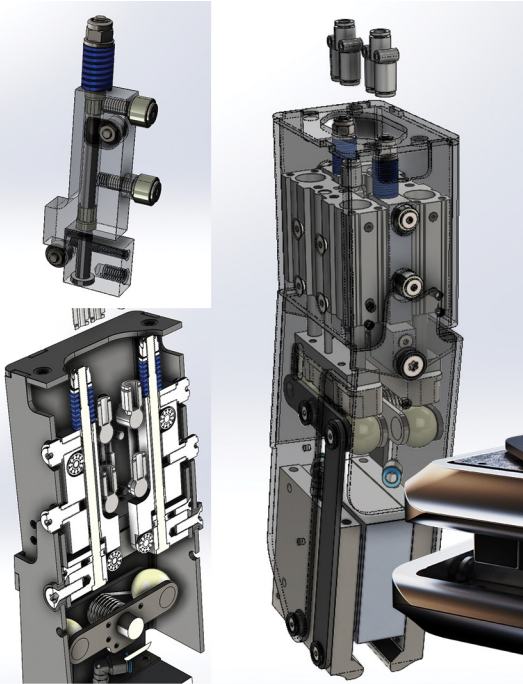
Portfolio

Bram Van den Broeck
+32 (0) 495 705 956

Product development & innovation
b.vandenbroeck@ikonoblast.be

Robotic picker | gripper

Development of 'Grip-it,' a picking tool designed for bin picking of ferromagnetic objects, like randomly oriented billets for furnace/CNC feeding



Ikonoblast BV

Pickit NV

Client
2020

Ikonoblast was asked on short notice to lend a hand and help tackle a development challenge within the shortest possible time by collaborating on the conceptual modification of an existing picking tool prototype that was already under development & extensive testing at Pickit.

At the time of the request, the design specs covered integrating the additional axis without significantly changing the existing picker tool prototype's external dimensions and mass while preserving its locking capacity in all movement degrees.

This design & development intervention involved analyzing the tool's operational prototype and modifying its mechanical design to outfit it with an additional pivot axis.

The ultimate aim of this short-notice intervention/collaboration was to modify and update the current prototype to verify if the newly introduced motion-freedom could further improve the success rate of first-pick-attempts for different types of bin-picking edge-cases up to +99%.

Afterward, the project was further developed with an additional pivot axis by Pickit's development partners and is now successfully launched onto the market.

Expertise

- **Concept & ideation. Mechanical component design.**
- **Industrial design. Product development.**
- **Sheet metal. CNC-milling/lathing.**
- **Prototyping. Pilot run & QC.**
- **Industrial automation.**