



PROC-X MANUFACTURING GROUP INC.

MINERALS, ADVANCED MATERIALS & NANOTECHNOLOGY PROCESSING SOLUTIONS

Engineering the materials that
power innovation across energy,
electronics, aerospace, defense,
ceramics, catalysts and
advanced industries.

FROM RAW MATERIAL TO
ENGINEERED PERFORMANCE.



Control
the Particle



Control
the Surface



Control
the Environment



Control
the Process



PROC-X MANUFACTURING GROUP INC.

FROM RAW MATERIAL TO ENGINEERED PERFORMANCE

Proc-X integrates proven process technologies and nano-enabled systems to deliver consistent, repeatable results for advanced materials and nanotechnology applications across every industry.



ENGINEERED SOLUTIONS FOR ADVANCED MATERIALS

- | | | |
|-----------------------|------------------------|----------------------------------|
| » Industrial Minerals | » Graphite & Graphene | » Functional Fillers |
| » Technical Ceramics | » Nanomaterials | » Advanced Composites |
| » Catalyst Materials | » Specialty Powders | » Coatings & Additives |
| » Carbon Materials | » Conductive Materials | » Performance Critical Materials |



ENGINEERED
FOR PRECISION



BUILT FOR
RELIABILITY



DESIGNED FOR
SCALABILITY



FOCUSED ON
RESULTS

ONE CONNECTED ADVANCED MATERIALS PLATFORM

Proc-X integrates multiple specialized process technologies into one coordinated platform for advanced materials, mineral processing and nanotechnology manufacturing.

AIS

Automated Ingredient Systems

bulk material handling, conveying, weighing, dosing and batching.

DP Mills

particle size reduction, classification, jet milling, micronization and powder conditioning.

QuantumX

advanced mixing, blending, vacuum processing, coating, drying and thermal transformation.

EmulXion

wet dispersion, nano-dispersion, colloid milling and homogenization.

FuXion

compounding & extrusion, polymer processing and hot-melt systems.

PROC-X Automation

controls, FAT, commissioning and lifecycle support.



SPECIALIST TECHNOLOGIES. INTEGRATED SOLUTIONS.
ONE **PARTNER**. ENDLESS POSSIBILITIES.

MATERIALS WE PROCESS



1. INDUSTRIAL MINERALS

- » Calcium Carbonate
- » Silica
- » Talc
- » Mica
- » Barite



2. TECHNICAL CERAMICS

- » Alumina
- » Zirconia
- » Silicon Carbide
- » Silica
- » Ceramic Precursors



3. CATALYSTS & SUPPORTS

- » FCC Catalysts
- » Zeolites
- » Alumina Supports
- » Silica Supports
- » Specialty Catalysts



4. CARBON MATERIALS

- » Graphite
- » Carbon Black
- » Hard Carbon
- » Activated Carbon
- » Specialty Carbons



5. GRAPHITE & GRAPHENE

- » Graphite Flakes
- » Graphene Powder
- » Few-Layer Graphene
- » Graphene Oxide
- » Graphene Dispersions



6. NANOMATERIALS

- » Nano Oxides
- » Nano Silica
- » Nano Alumina
- » CNTs
- » Specialty Nanoparticles



7. ADVANCED COMPOSITES

- » Polymer Composites
- » Ceramic Composites
- » Carbon Composites
- » Metal Matrix Composites
- » Hybrid Materials



8. FUNCTIONAL FILLERS

- » Conductive Fillers
- » Thermal Fillers
- » Flame Retardants
- » Barrier Fillers
- » Performance Additives

PARTICLE ENGINEERING & SIZE CONTROL SOLUTIONS

Precision particle size reduction for even the hardest
and most abrasive materials.

JET MILLS



- » Ultra-fine grinding
- » 1–20 micron d50
- » High purity
- » Minimal contamination

AIR CLASSIFIER MILLS



- » Precise top-size control
- » High efficiency
- » Tight particle distribution
- » Scalable performance

PIN MILLS



- » Impact pin milling
- » Moderate fineness
- » Durable construction
- » Consistent results

CRYOGENIC MILLS



- » Low temperature milling
- » Heat-sensitive materials
- » Fine particle sizes
- » Reduced agglomeration



PRECISE SIZE
CONTROL



CONSISTENT
PSD



LOW
CONTAMINATION
RISK



BUILT FOR ABRASIVE
MATERIALS

ADVANCED MIXING, COATING & THERMAL PROCESSING

QuantumX systems combine high-intensity mixing, vacuum and pressure processing with thermal transformation for advanced materials.



RIBBON MIXING

Uniform blending of dry powders and additives.



PLOUGHSHARE MIXING

High-intensity for coatings, liquid addition and agglomerate breakdown.



PADDLE MIXING

Gentle yet effective for fragile or sensitive materials.



VACUUM PROCESSING

Moisture removal, solvent recovery and deaeration.



PRESSURE PROCESSING

Reactions, gas-solid interactions and special environments.



THERMAL PROCESSING

Drying, activation and transformation up to 450°C and beyond.



MATERIAL
INTEGRITY



UNIFORM
BLENDING



THERMAL
CONTROL



REPEATABLE
RESULTS



NANOTECHNOLOGY & HIGH-SHEAR DISPERSION

EmulXion high-shear and high-pressure homogenization systems for nano-dispersion and advanced slurry preparation.



HIGH-SHEAR DISPERSION

Rapid wetting and deagglomeration of difficult powders.



HIGH-PRESSURE HOMOGENIZATION

Nano-scale particle size reduction and uniform dispersions.



NANO-EMULSIONS

Stable nano-emulsions and colloidal systems.



DEAERATION

Remove entrained air for stable fluids and consistency.



NANO-SCALE
DISPERSION



STABLE
SUSPENSIONS



IMPROVED
RHEOLOGY



LAB TO PLANT
SCALABILITY

FROM DEVELOPMENT TO PRODUCTION WE ENGINEER EVERY STEP

Proc-X supports you from concept and R&D through scale-up, production and long-term performance.



PROCESS DEVELOPMENT

concept testing to optimized process design.



PILOT TESTING

validate results and refine parameters.



SCALE-UP ENGINEERING

seamless transition from pilot to commercial production.



SYSTEM INTEGRATION

full automation, controls, FAT and commissioning.



LIFECYCLE SUPPORT

parts, service, training and ongoing technical support.



GLOBAL PARTNERSHIP

trusted partner across every stage of your success.



LET'S ENGINEER THE FUTURE OF ADVANCED MATERIALS TOGETHER.



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