

ADVANCED MATERIALS

in New York's Capital Region



The Capital Region's Advanced Materials Cluster includes a vast array of chemical manufacturers that supply the semiconductor, biotechnology, automotive, aerospace, medical, pharmaceutical and defense industries. The Albany-Schenectady-Troy metro area ranks 22nd in the nation for the most chemical manufacturing jobs. Major employers include **Regeneron Pharmaceuticals, Momentive Performance Materials, SI Group, SABIC** and **Ames Goldsmith**. The region's advanced Materials workforce is supported by a talent pipeline that includes **Rensselaer Polytechnic Institute, SUNY Polytechnic Institute, the University at Albany, Union College, Skidmore College** and **Siena College**. The Albany metro area is one of fewer than 50 metros nationwide where the private sector spends more than \$1 billion on R&D. There are advanced materials research labs at **GE Global Research, SABIC** and **Momentive Performance Materials**. Several startups are also making next-generation materials, including **Ecovative Design, Imitec** and **Free Form Fibers**.

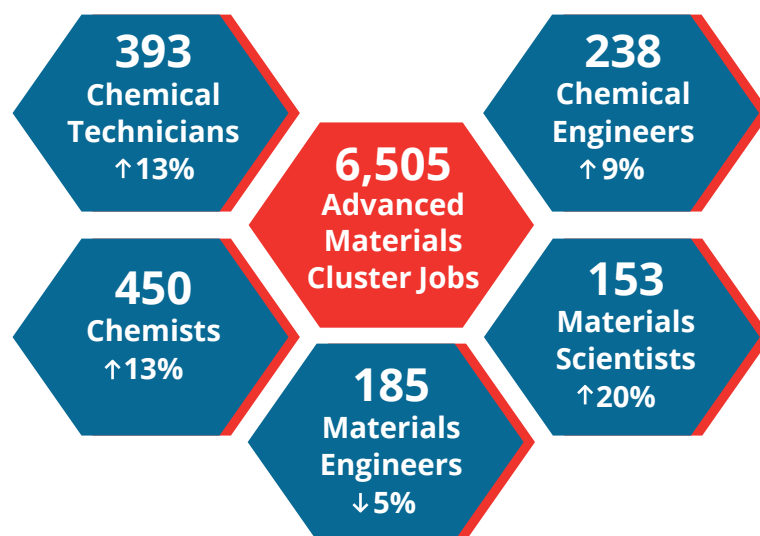


Automated Dynamics

R&D ASSETS

- ▶ *Contract Research*
 - AMRI
 - GE Global Research
- ▶ *Research Centers*
 - RPI
 - Rensselaer Exploratory Center for Cheminformatics Research
 - New York State Center for Polymer Synthesis
 - Baruch '60 Center for Biochemical Solar Energy Research
 - Center for Materials, Devices, and Integrated Systems
 - SUNY Poly
 - Materials Engineering Technology Center (META Center)
 - New York State Center for Advanced Technology in Nanomaterials and Nanoelectronics (CATN2)
 - TEL Technology Center, America R&D Center (TEL TCA)
 - UAlbany
 - Center for Biochemistry and Biophysics

WORKFORCE (2019, 5-Year % Change)



TALENT PIPELINE (2018)



333 Physical science degrees, including **38** chemical engineering/chemistry engineers



\$23.4M University physical sciences R&D

MAJOR ADVANCED MATERIALS MANUFACTURERS

1. **Regeneron Pharmaceuticals**, East Greenbush: biopharmaceuticals
2. **Momentive Performance Materials**, Waterford: silicone sealants and coatings
3. **SI Group**, Niskayuna/Rotterdam: intermediate chemicals for adhesives, rubber, fuel and lubricants
4. **SABIC**, Selkirk: Ultem and Noryl resins

ABRASIVES

5. **Barton International**, Glens Falls: garnet abrasives, & mineral abrasives
6. **Flex Trim**, Queensbury: abrasive foams, abrasive strips, belts, strips and discs
7. **Saint-Gobain Abrasives**, Watervliet: industrial-grade sandpaper

ADHESIVES

8. **YINCAE Advanced Materials**, Colonie: coatings, adhesives and encapsulants used in the microchip and optoelectronics
9. **Adirondack Specialty Adhesives**, Albany: advanced synthetic grains, high tenacity multifunctional backings and complex bonding systems

CERAMICS

10. **Blasch Precision Ceramics**, Menands: net shape ceramic products and refractory components
11. **Norlite Lightweight Aggregate**, Cohoes: light weight, porous ceramic material

COMPOSITES

12. **Automated Dynamics**, Niskayuna: carbon fiber and thermoplastic composite parts
13. **Vistex Composites**, Schenectady: thermoset and thermoplastic composites

CONTRACT RESEARCH AND/OR MFG

14. **Greenfield Manufacturing**, Saratoga Springs: contract chemical manufacturing
15. **GE Global Research**, Niskayuna: contract materials research
16. **AMRI**, Albany: contract drug research

NEXT-GEN MATERIALS

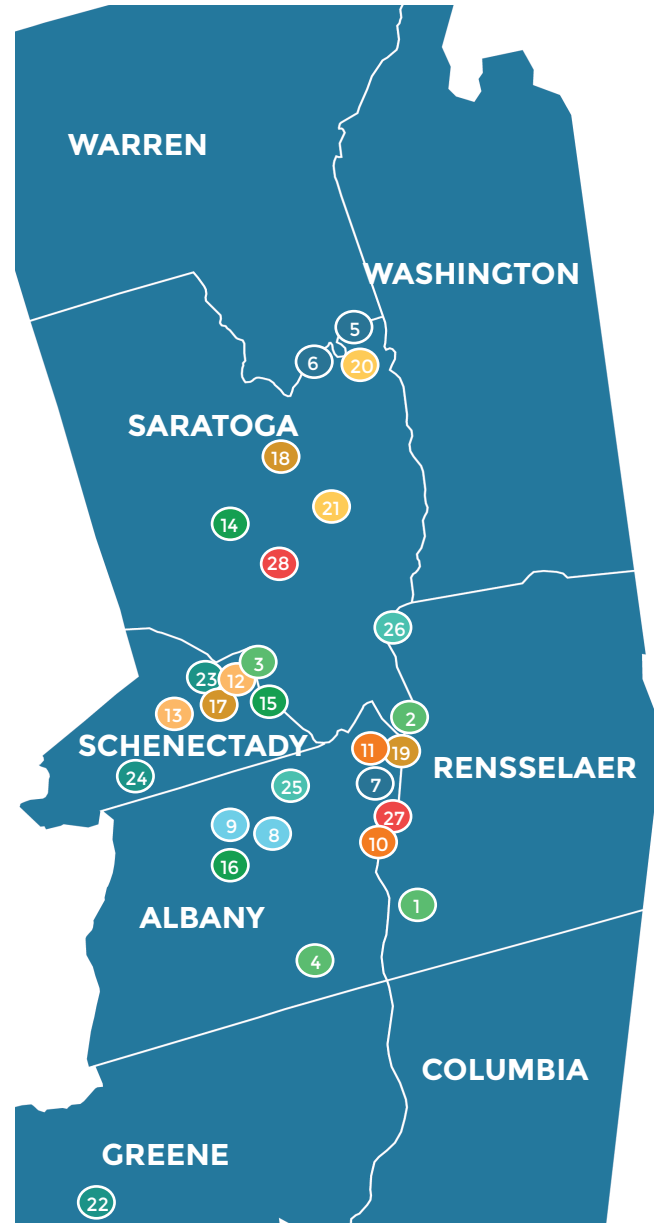
17. **Imitec**, Schenectady: polyimides and polyimides
18. **Free Form Fibers**, Saratoga Springs: ceramic matrix composites
19. **Ecovative Design**, Green Island: mycelium materials

OTHER

20. **Ames Goldsmith Corp**, Glens Falls: silver refining
21. **AgroChem**, Saratoga: agricultural chemicals

PHARMACEUTICAL

22. **GlaxoSmithKline**, East Durham: toothpaste
23. **DSM Nutritional Products**, Schenectady: essential nutrients such as vitamins, carotenoids, nutraceuticals and nutritional lipids
24. **Clinical Encapsulation Service**, Schenectady: encapsulated clinical supplies for pharmaceutical drug studies



RUBBER/RESINSUBBER/RESINS

25. **Tire Conversion Technologies**, Latham: compression-molded, recycled rubber products
26. **Polyset**, Mechanicville: cationic catalysts, epoxy siloxane resins and electrical/optical coatings

SILICONES

27. **Extreme Molding**, Watervliet: plastic injection and silicone molded products
28. **Specialty Silicone Products**, Ballston Spa: custom silicone compounds, silicone lubricating greases, conductive silicone elastomers, and thin silicone membranes