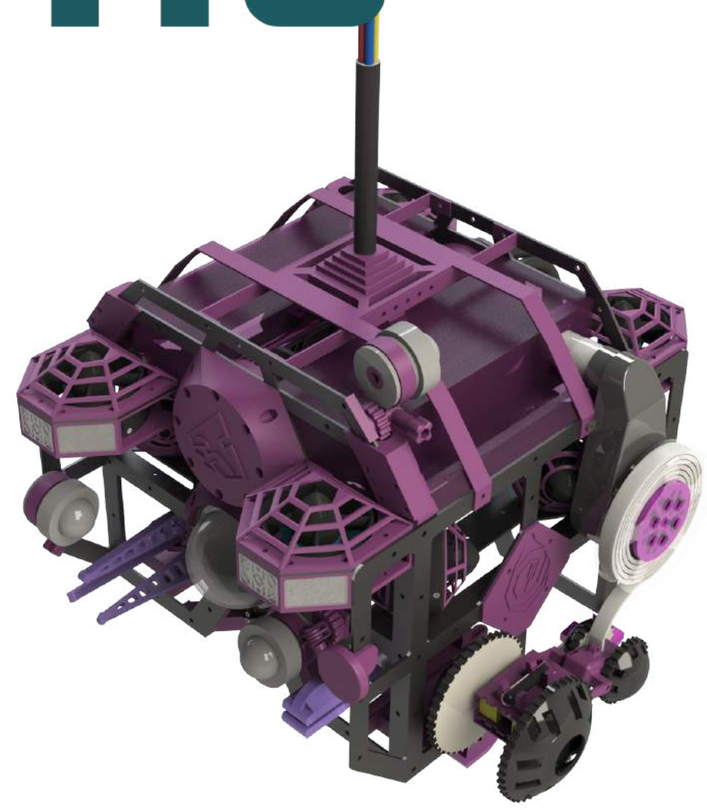
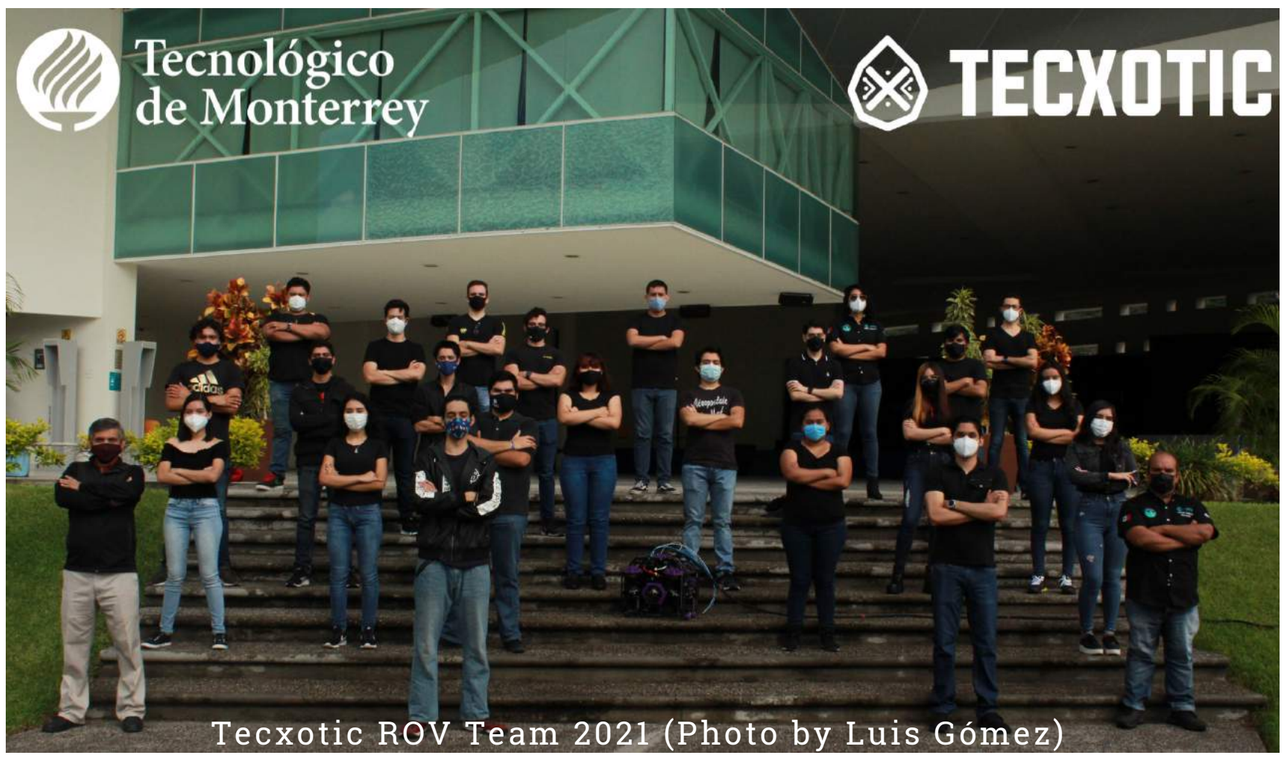
TECXOTIC

- **COMPANY NAME:** TecXotic
- **SCHOOL NAME:** Tecnológico de Monterrey, Campus Cuernavaca
- **STATE AND COUNTRY:** Morelos, México
- **DISTANCE TRAVELED:** 3,863.5 km
- **PARTICIPATION HISTORY:** Since 2015
- **RANGE OF STUDENT'S COLLEGE LEVELS:** High School Sophomore-6th Bachelor year

- **ROV NAME:** KOLOP
- **SIZE AND MEASUREMENTS:** 42cm height, 54cm width, 42 cm depth
- **TOTAL COST (USD):** $3,353.24
- **TOTAL MASS IN AIR:** 20kg
- **TOTAL WORK HOURS:** 10,000





Tecxotic ROV Team 2021 (Photo by Luis Gómez)

David García - Mentor
Javier Montiel - Supervisor
Jesús Eduardo Simental - Supervisor
Pedro Nájera - Supervisor

Doc. = Documentation | Elect. = Electronics
Progra = Programming | Mech. = Mechanics
SM = Social Media | Comm = Communication

Hilda Rojas Alemán - 6th - Safety, Doc. - COO
Luis Gómez Talavera - 10th - SM | Comm. - CCO
Aaron Pérez Ontiveros - 6th - Progra. | Elect. - CEO
Jael A. López García - 10th - Mechanics | Design. - CDO/DEO
Ricardo Rodríguez Figueroa - 4th - Design | Elect. | Doc. - CIO
Alejandro Hidalgo Badillo - 2nd - Progra. | Design | Elect. - CTO
Jorge E. Turner Escalante - 2nd - Progra. | Elect. | Doc. - Safety Lead
Ximena Ávila Villagómez - 6th - Elect. - Colaborator
Ian Doring Romo - 2nd - Mech. | Design - Colaborator
Rosibel Nava Morales - 4th - Design, Doc. - Colaborator
Bernardo Salgado Dorantes - 2nd - Mech. - Colaborator
Daniel Moreno Solache - 4th - Electronic - Colaborator
Ana Bonavides Aguilar - 2nd - Safety | Doc. - Colaborator
Daniel Hidalgo Badillo - 2nd - Mech. | Design. - Colaborator
Jorge A. Vega Mendez - 4th - Mech. | Design. - Colaborator
Manuel Camacho Padilla - 4th - Progra. | Elect. - Colaborator
José J. Fragoso Figueroa - 6th - Design | Progra. - Colaborator
Merle S. Flores García - 4th - Design | SM | Mech. - Colaborator
Héctor A. Sanvicente Solis - 4th - Mech. | Design. - Colaborator
Megan S. Martínez Andres - 2nd - SM | Design | Doc. - Colaborator
Camila Rojas Alemán - HS Sophomore - Doc. | Safety - Colaborator
Brian I. Chavéz Viveros - 4th - Design | Elect. | Mech. - Colaborator
Mariana De la Rosa B. - 2nd - SM | Design | Doc. | Safety - Colaborator
Sebastián Cruz Espinosa de los Monteros - 4th - Design - Colaborator
Laura A. Santos Flores - 2nd - SM | Design | Doc. | Safety - Colaborator
Valeria Valencia Ayala - 2nd - SM | Design | Doc. | Safety - Colaborator

SAFETY FEATURES:

- Custom guards for all thrusters.
- A slim profile tensor relief system.
- Dedicated fuses for the main ROV and micro-ROV.
- An accesible Emergency Stop Button .
- A pressure release valve in each electronic enclosure.
- Sharp edges were considered and eliminated during design phase.
- Each penetrator is sealed with epoxy resin and vacuum-tested to guarantee that they are not a failure point.
- A series of sensors indicating the operators the general status of the ROV and if necessary a safe shutdown.
- In case power is cut off or reconnecting is not possible, all thrusters shut down and due to the slight positive buoyancy of Kolop, an easy retrieval is possible from above the waterline.
- The pressure relief valves allow Kolop to work perfectly at depths greater than the stipulated by the RFP.

SPECIAL FEATURES:

Software:

- Propietary UI and telemetry

Electronics

- Digital and analogic camera system
- Modular power system
- LED status indicator system

Design

- Slim tensor relief
- frame wheels
- Soft adaptive gripper
- Gripper switch
- Easy conversion from 8 to 6 thrusters
- Three levels for tool placement
- Geometry and patterns inspired by mexican folklore

Safety

- Safety stickers
- SOPs
- New safety protocols and communication system

Logistics

- A new and integral organizational structure
- An improved methodology for design and testing phases