

Researchers:

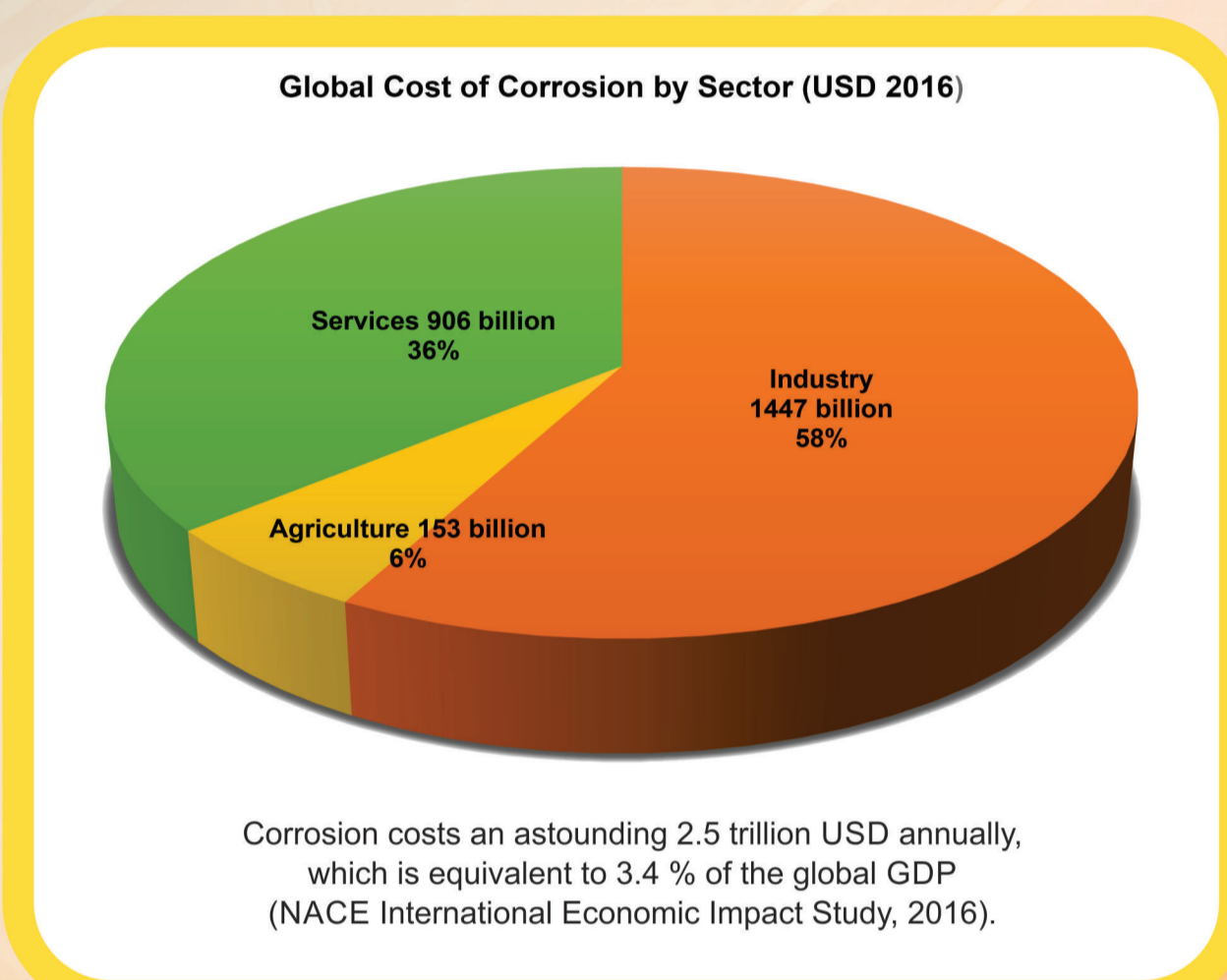
DR. MOHD. HAZWAN HUSSIN

Shahadad Zainol Abidin
Abdulmajid Abdullahi
Tuan Sherwyn Hamidon
Norizaty Irman

▶ COPYRIGHT (LY2019002111)



RUSTY-X: ECO-FRIENDLY RUST REMOVER



Novelty and Inventiveness

- RUSTY-X is formulated using eco-friendly ingredients
- Novelty check on SCOPUS: Novel
- Exploiting mangrove bark tannins as a green ingredient to formulate a novel bio-based rust remover
- Plays a positive role in rust removal and chemical corrosion protection owing to being green, efficient and sustainable.
- Doping mangrove bark tannins of a composition of invention into the base formulation
- The formulation is free from generating any toxic by-products

Applicability

- RUSTY-X can be serviceable on any metal and alloy
- The product easily removes rust without damaging the surface
- The product shows a high rust transformation of more than 90 %

Product Readiness

- TRL 6 : Done field test in related industry
- Has undergone complete R&D
- Field testing: Completed in collaboration with IGL COATINGS and EXCEL RIM SDN. BHD
- Prototype available

Research Achievement

- Publications:
3 articles in ISI-cited journals
- Recognition:
Gold Medal in SIRIM Invention, Innovation & Technology Expo (Si2TE) 2019
Research/Innovation Fund: USM Short Term Grant (304/PKIMIA/6315100)
Talent Development: 2 PhD ongoing, 1 student MSc and 1 BSc Graduated

Intellectual Property

- Copyright filed (LY2019002111)

Industry/ Business Partner

- IGL COATINGS
- EXCEL RIM SDN. BHD.

Commercialization Potential

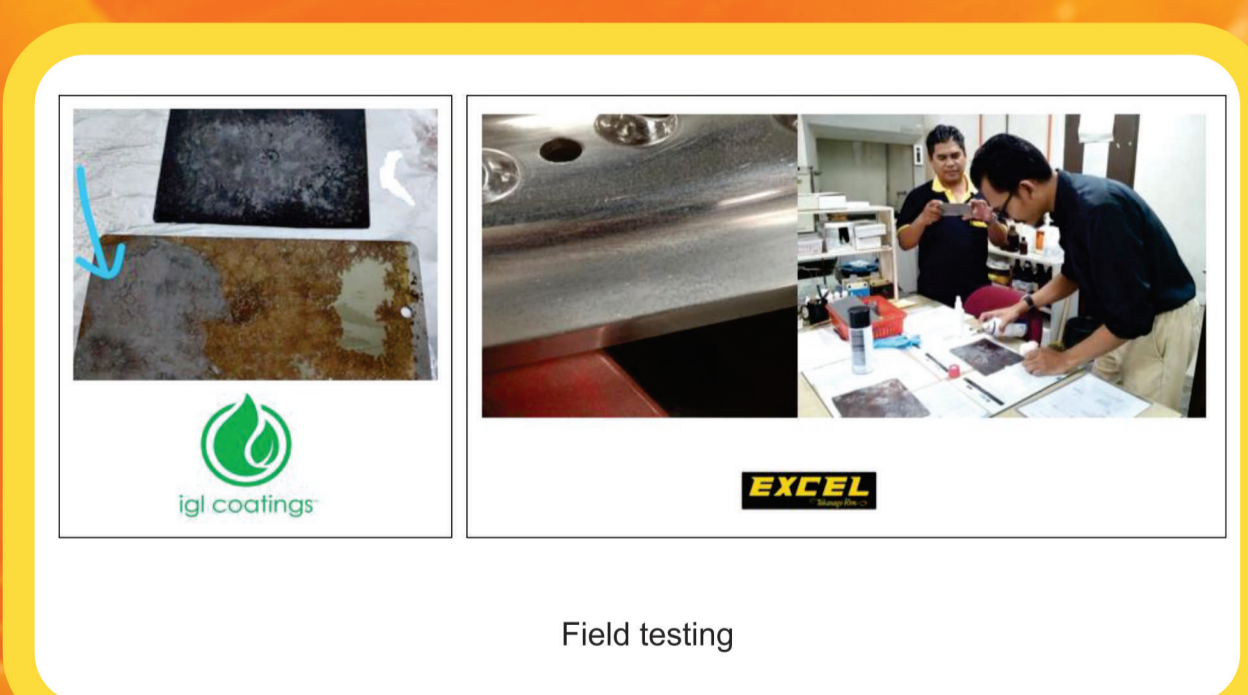
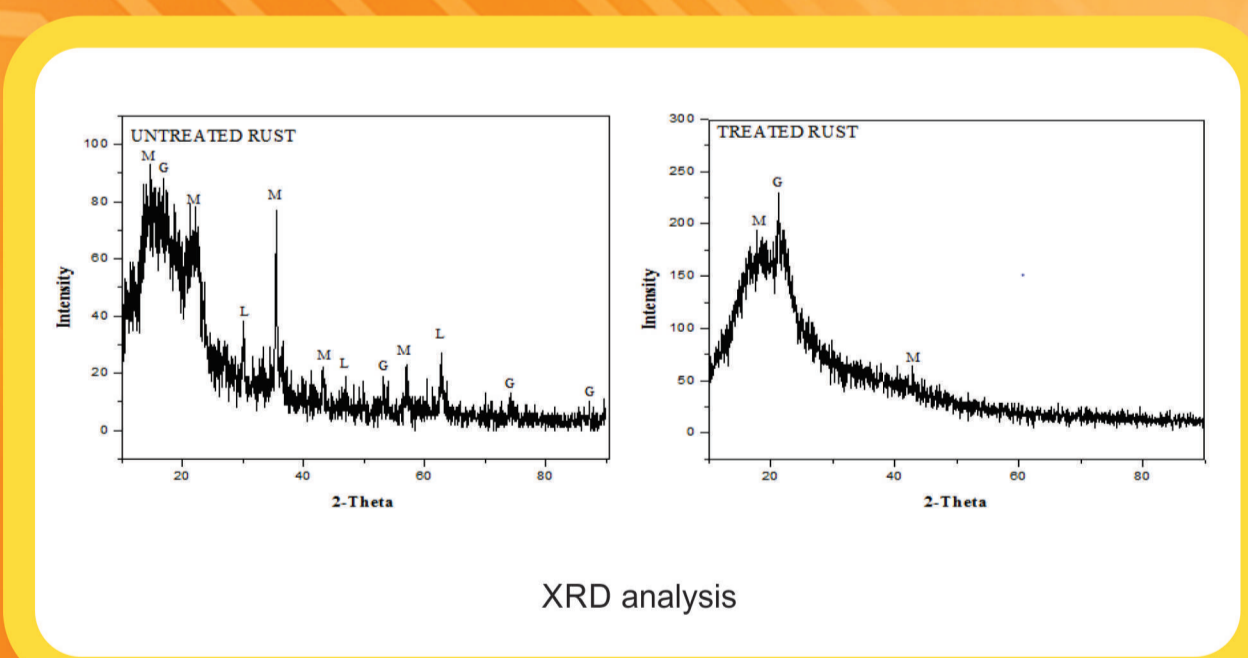
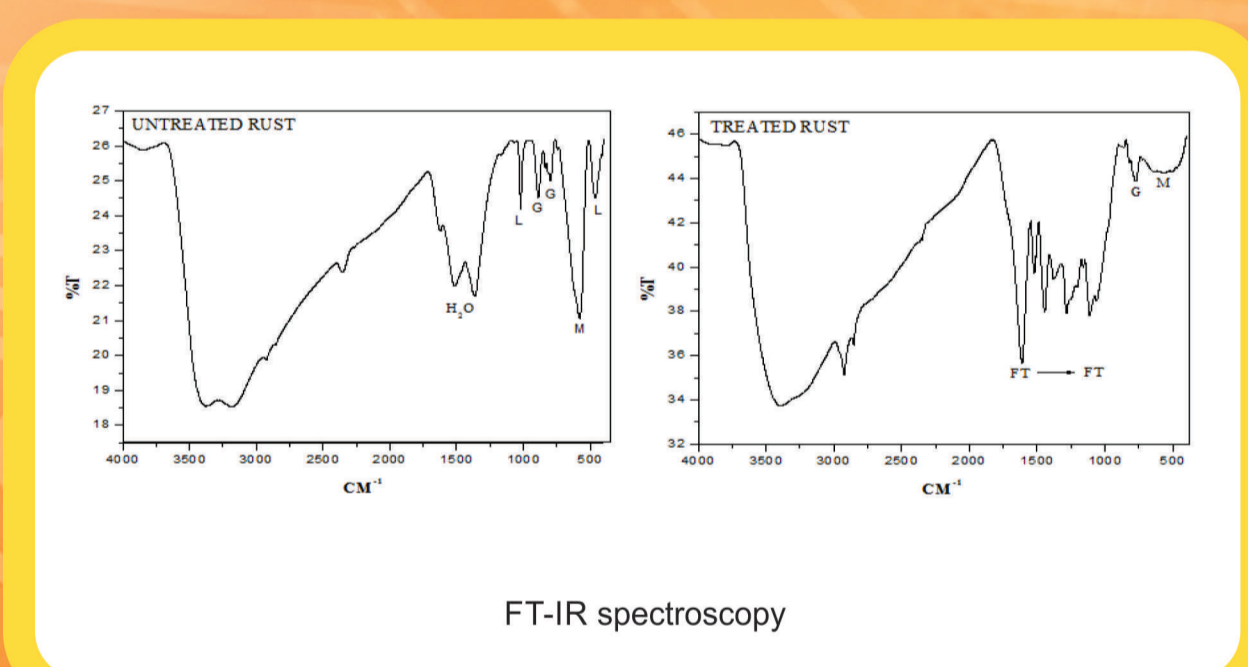
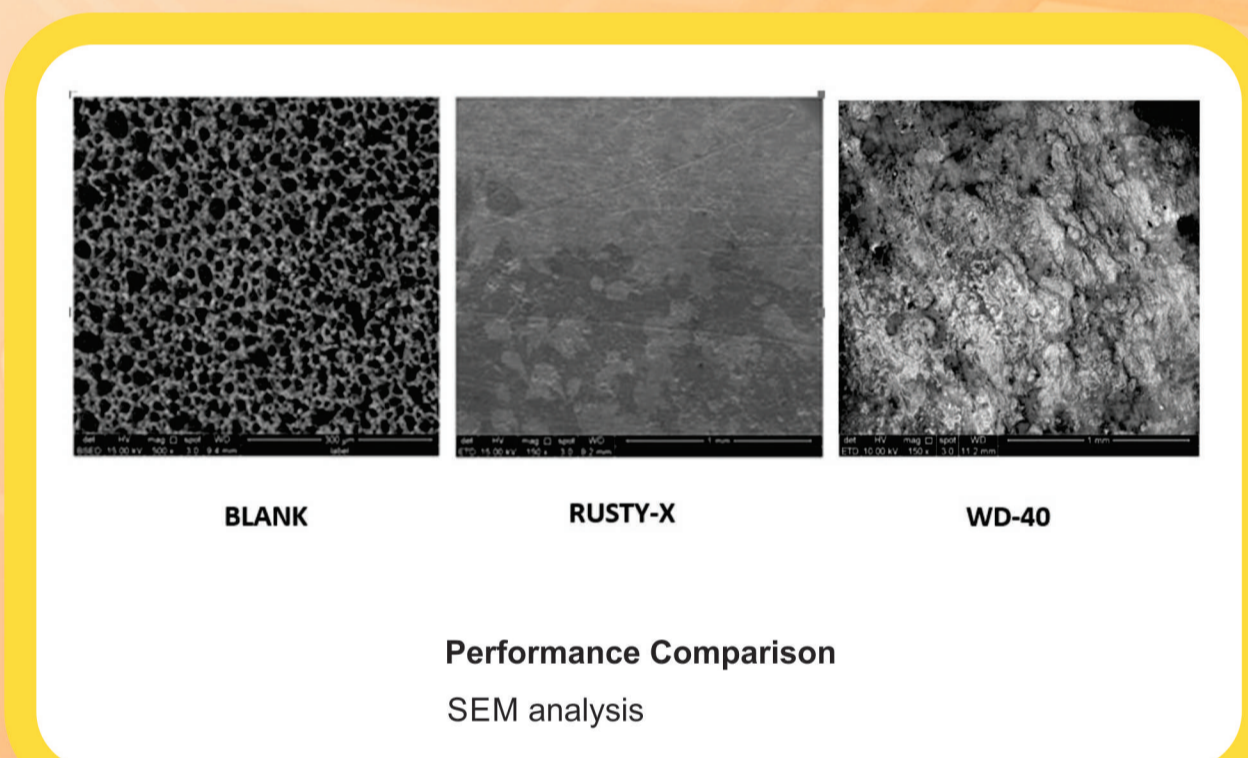
- RUSTY-X has a high potential to be commercialized since the ingredients being used are eco-friendly, affordable, and readily available and it easy to use.
- Target industries include: Oil and Gas, Automotive, and Building construction sites.
- Received purchase order worth RM10,000.00

Level of Impact

- Maximizing savings due to the impact of corrosion by efficient rust removal and improved corrosion protection
- RUSTY-X is designed to improve the shelf life of steel products

Presentation and other strengths

- RUSTY-X is a plant-based rust remover: non-toxic, and harmless to humans and the environment
- Prepared using a green organic inhibitor which is water based
- The formulation is non-flammable and non-corrosive
- Comparative studies revealed that RUSTY-X yields better performance compared to some commercially available rust removers
- Cheap compared to commercial brand (RM40 / litre)



Contact Person:

DR. MOHD HAZWAN HUSSIN

School of Chemical Sciences, Main Campus
Universiti Sains Malaysia, Penang, MALAYSIA

Tel: +604-653 6378 Fax: +604-657 4854 E-mail: mhh@usm.my