

Capital Project Appraisal

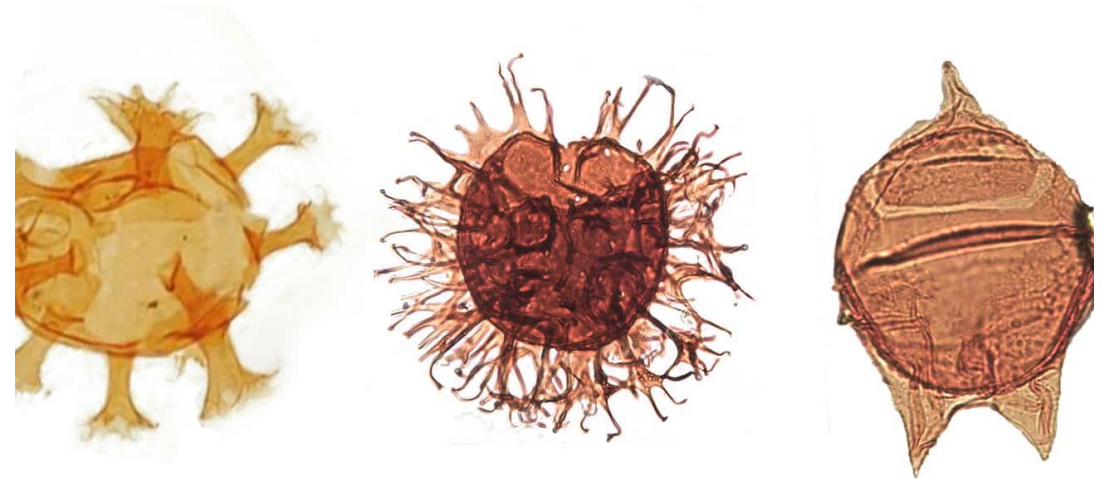
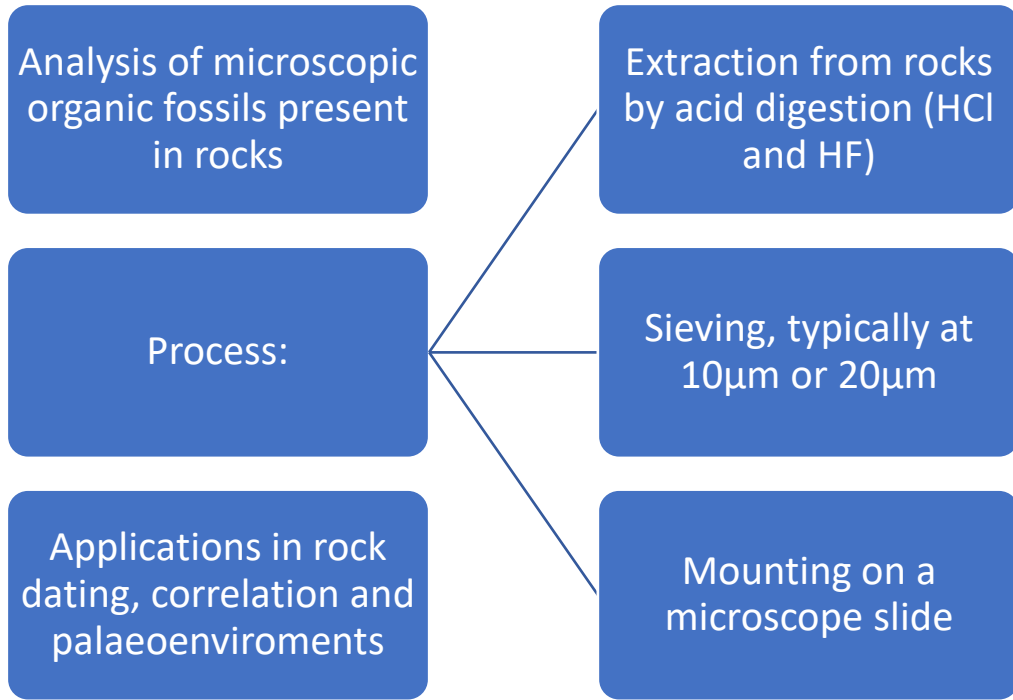
Design and manufacturing of a semi-automatic Palynological Processing Unit

Fernando Mantilla-Duran

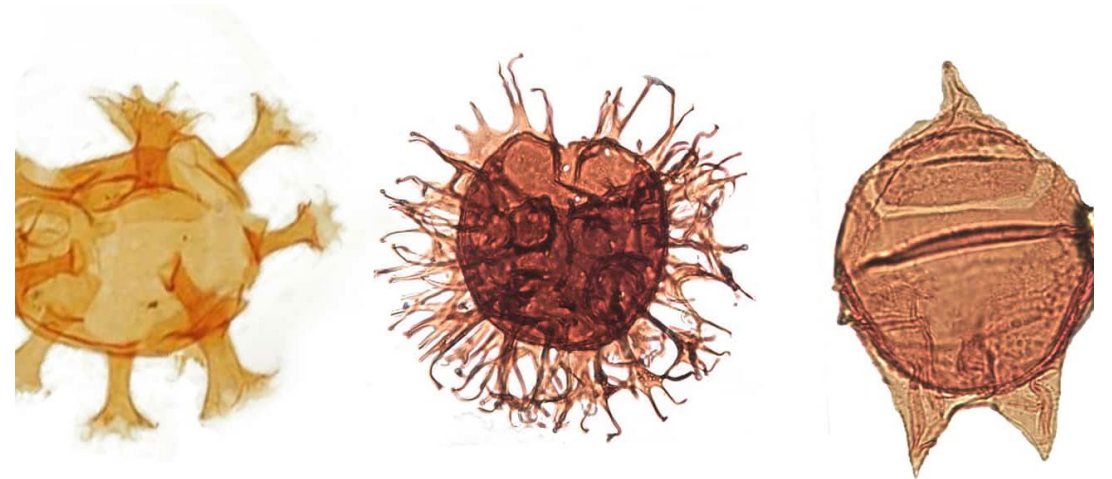
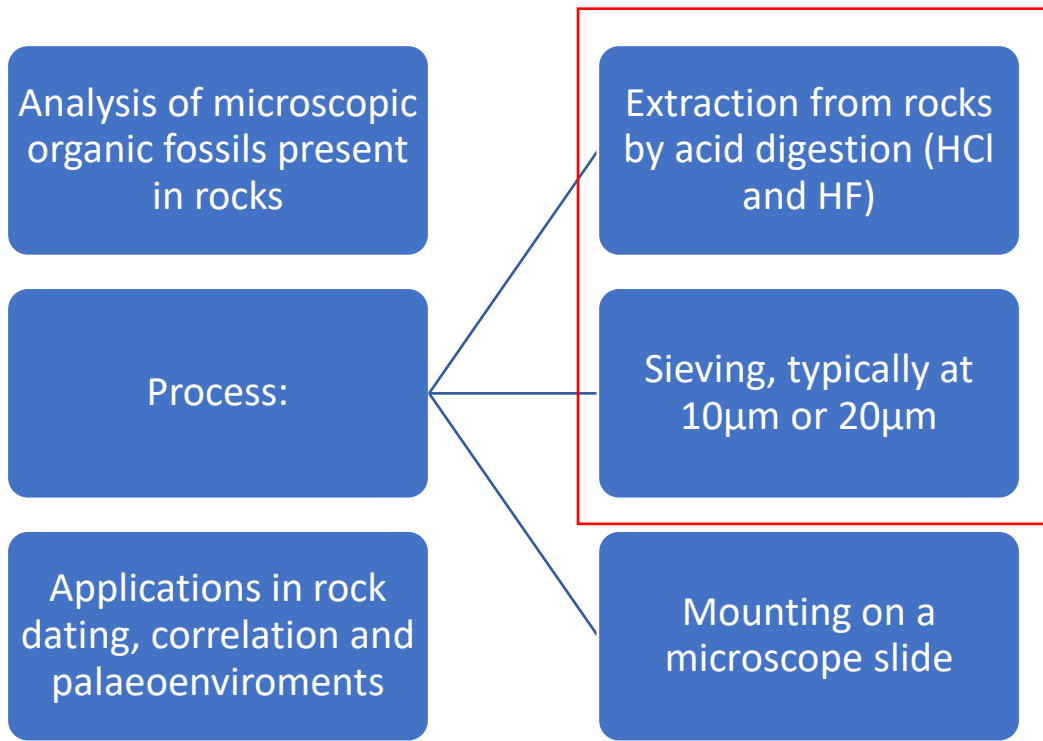


Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Brief introduction to palynology

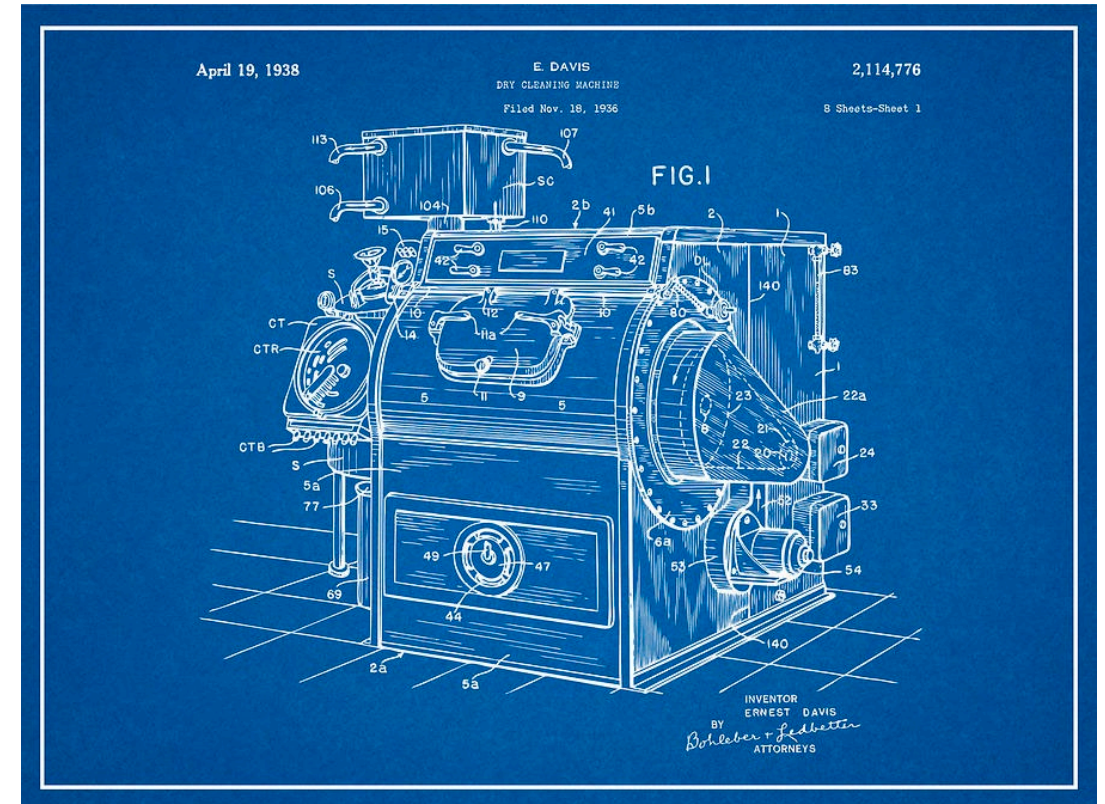


Opportunity for innovation



Design and manufacturing of a semi-automatic Palynological Processing Unit

- Currently the entire process is done manually
- Potential versatility for deploying it offshore
- Cost saving project
- Investment: £60,000



Consumables	£7.00
Technician time/hr	0.75
Technician cost	£20.95
Total cost	£22.71

Consumables	£7.00
Technician time/hr	0.08
Technician cost	£20.95
Total cost	£8.68

Cost saving per slide: £14.04

[illegible]

- Payback 2.8 years
- NPV 82,186
- IRR 32%
- PI 2.36
- BCR 1.36
- ARR 46.16

Cash Flow	FINANCIAL YEAR											
	CY	CY +1	CY +2	CY +3	CY +4	CY +5	CY +6	CY +7	CY +8	CY +9	CY +10	Total
Operating profit		26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	269,501
Capital expenditure	(60,000)											(60,000)
Taxation		(5,121)	(6,738)	(6,738)	(6,738)	(6,738)	(6,738)	(6,738)	(6,738)	(6,738)	(6,738)	(65,758)
Terminal value											4,000	4,000
NET CASH FLOW	(60,000)	21,830	20,213	20,213	20,213	20,213	20,213	20,213	20,213	20,213	24,213	147,743
Cumulative cash flow	(60,000)	(38,170)	(17,958)	2,255	22,467	42,680	62,892	83,105	103,317	123,530	147,743	
Pre Tax Payback	(60,000)	(33,050)	(6,100)	20,850	47,800	74,750	101,700	128,651	155,601	182,551		
Payback	2.8years											
Denominator		0.93023	0.86533	0.80496057	0.7488	0.696559	0.6479615	0.60275	0.5607	0.5216	0.48519	
Future Value	(60,000)	20306.6	17490.6	16270.3138	15135.2	14079.23	13096.961	12183.2	11333.2	10543	11747.8	
Discount rate at	7.5%											

Other factors to consider:

- Health and Safety improvements
- Positive perception from our clients (innovative)
- Potential further cost savings if the unit can be deployed offshore without laboratory technicians

Recommendations



Project financially viable.



Payback period of 2.8 years, but further savings possible



Improvements in health and safety



Incorporation of innovation



Marketing tool