Review of Soil Remediation Technologies through Patent Analysis

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PBC, Perth

21 November 2009

Indian Network for Soil Contamination Research

Merit India Consultants, New Delhi

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Content

I. Importance of IP & patent analysis in Knowledge-Based Society

II Introduction to a patent analysis & software

III Remediation technologies as a case study for patent analysis

IV New insight gained through the patent analysis

Conclusion

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Importance of IP in the knowledge-Based Society

Rapid Change from an Industrial Society

to a Knowledge-Based Society

- Price per gram :
- Gold $35,
- Interferon $5,000

The development and securing of new innovative are sources for creating national wealth, not just a means of acquiring wealth.

- Transforming traditional industry to high value-added industry - a must

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IP in the knowledge-Based Society

Patent databases now available freely online & patent analysis developed as a very potent technique to gain invaluable insights

for

- Planning for new technology development programmes
- Patent search - must for technology licensing & commercialization
- Strategic decisions

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Patent Search vs Patent Analysis

Patent Search

– for a specific patent through its number, title or inventor

Patent Analysis

- data mining through keyword search
- capturing patents in a given field and analyzing patenting trends – requires a dedicated software

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Matheo Patent software designed to search, retrieve and analyse patent data from the USPTO and Esp@cenet .

can

- automatically retrieves patents based on keywords
- creates your local database
- allows sorting on standard or user defined classification numbers
- manages the patent families
- statistically analyzes the patents collected
- generates graphic displays
- creates personal reports

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Analysis

1178 Patents : Esp@cenet

Abstract - Remediation

Title - soil

Duration – Last 22 yr

Matheo Patent 9.1 - [soil]

Project Edit Show Graphics Reports Exports Import Tools Scores Windows ?

New Open Save Add patents Update

Patent Analysis Patent Info None dl All read Graphics... Report

Search

S	C	D	Pertinence	Number	Title	PR.D		Sc...	C...	C...
				WO9401995A1	NO TITLE AVAILABLE		48			
				WO9819801A1	NO TITLE AVAILABLE		36			
				WO9711795A1	NO TITLE AVAILABLE		35			
				US5284503A	PROCESS FOR REMEDIATION OF LEAD-CONTAMINATED SOIL AND WASTE BAT	11/10/1992	32		50	15
				WO9855240A1	REMEDIATION METHOD	6/5/1997	29			3
				WO9739984A1	SUBSURFACE REMEDIATION METHOD AND APPARATUS	4/25/1996	29			6
				WO9501232A1	IN-SITU REMEDIATION OF CONTAMINATED HETEROGENEOUS SOILS	7/2/1993	23			6
				WO0178914A2	HEATER ELEMENT FOR USE IN AN SITU THERMAL DESORPTION SOIL REMEDIA	4/14/2000	23			6

Bibliographic Data | Abstract | Description | Claims | Claims Tree | Textual Analysis

PROCESS FOR REMEDIATION OF LEAD-CONTAMINATED SOIL AND WASTE BATTERY

User Comment :

Patent number : US5284503A

Publication date : 2/8/1994

Inventors : BITLER JOHN A (US); BARANSKI JOHN P (US);

Applicants : EXIDE CORP (US);

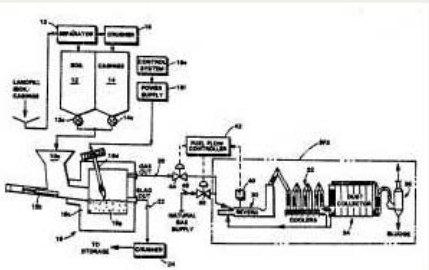
IPC (All Digits) : B09C1/00; A62D3/00; B09C1/06; A62D3/37; B09B3/00; A62D101/43; C22B7/00; C22B4/00; C10B53/00; C22B13/02; H01M10/54; B09B5/00; C03B5/00; C03C1/00; C22B13/00; A62D3/19; C03B5/02; C22B4/04; A62D101/24; C22B7/04;

IPC (4 Digits) : B09C; A62D; B09B; C22B; C03C; C10B; H01M; C03B;

IPC CI : B09C1/00; A62D3/00; B09B3/00; C22B7/00; B09B5/00; C03B5/00; C03C1/00; C10B53/00; C22B4/00; C22B13/00; H01M10/54;

IPC CN : None;

IPC AI : B09C1/06; A62D3/37; B09B3/00; A62D3/00; C22B7/00; A62D3/19; B09B5/00; C03B5/00; C03B5/02; C03C1/00; C10B53/00; C22B4/00; C22B4/04; C22B13/02;



D/I Patents : 1177 Families : 315 Request(s) : Viewing Family Patent(s) : 31 * Registered not tested *

Who are the significant inventors in this field?

The software allows you to sort on 'Inventor'!

Identified most prolific inventors:

Vinegar Harold J (94)

Stegemeier George (co-inventor) (75)

Gray Neil CC (66)

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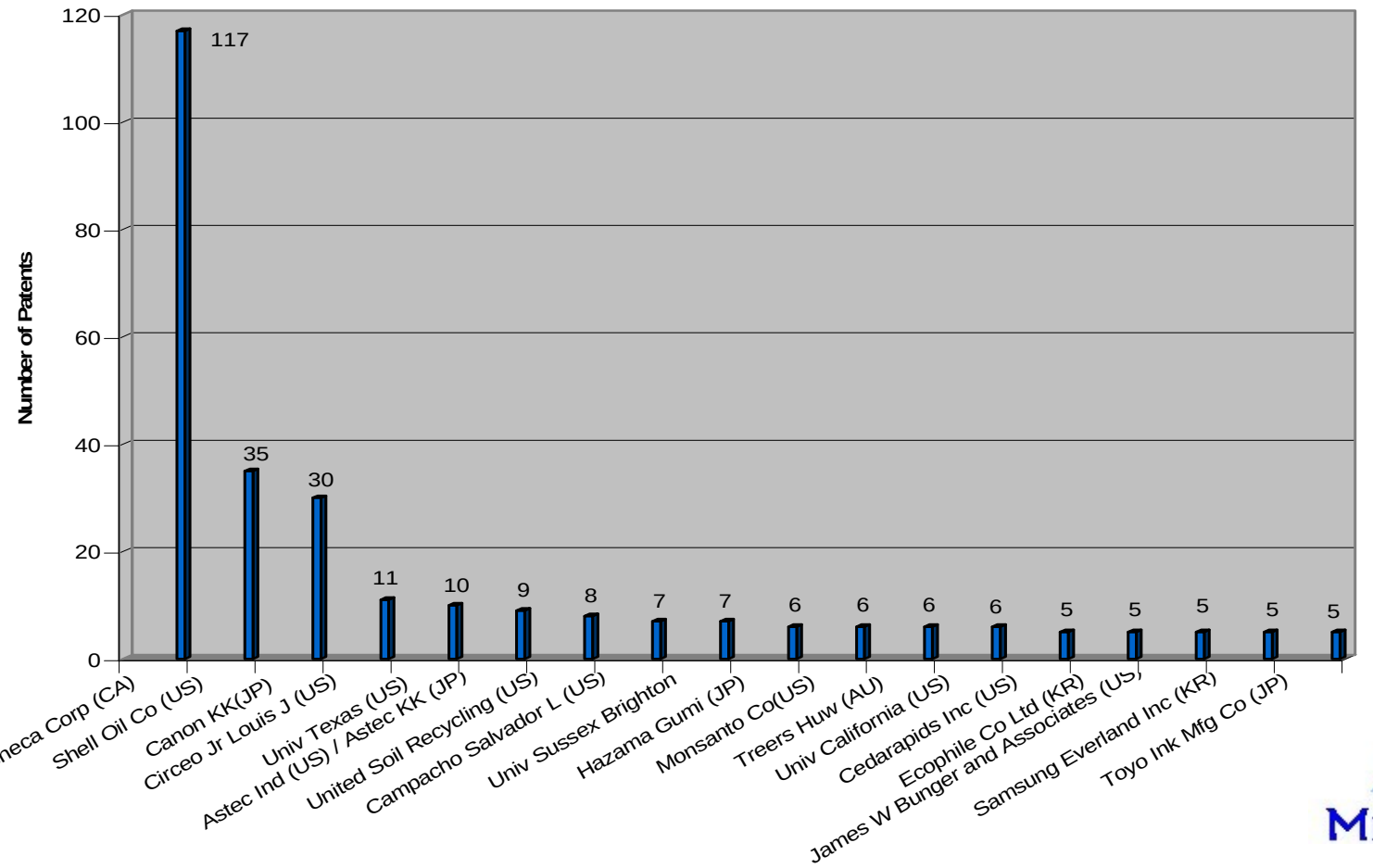
Major Patent Holders in Soil Remediation Technologies



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Technology Status

Looking through IPC codes

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No.	IPC Code	Technical Features of Patents	Family	Patent
1	B09C1/00	Reclamation of contaminated soil	236	815
2	B09C1/08	Reclamation of contaminated soil - chemically	118	433
3	B09C1/10	Reclamation of contaminated soil – microbiologically or by using enzymes	87	371
4	B09C1/06	Reclamation of contaminated soil - thermally	77	358
5	B09C1/02	Reclamation of contaminated soil – extraction using liquids, e.g. washing, leaching	72	265
6	B09B3/00	Destroying solid waste or transforming solid waste into something useful or harmless	62	230
7	A62D3/00	Processes for harmful chemical substances	55	209
8	E02D3/00	Improving or preserving soil or rock	20	123

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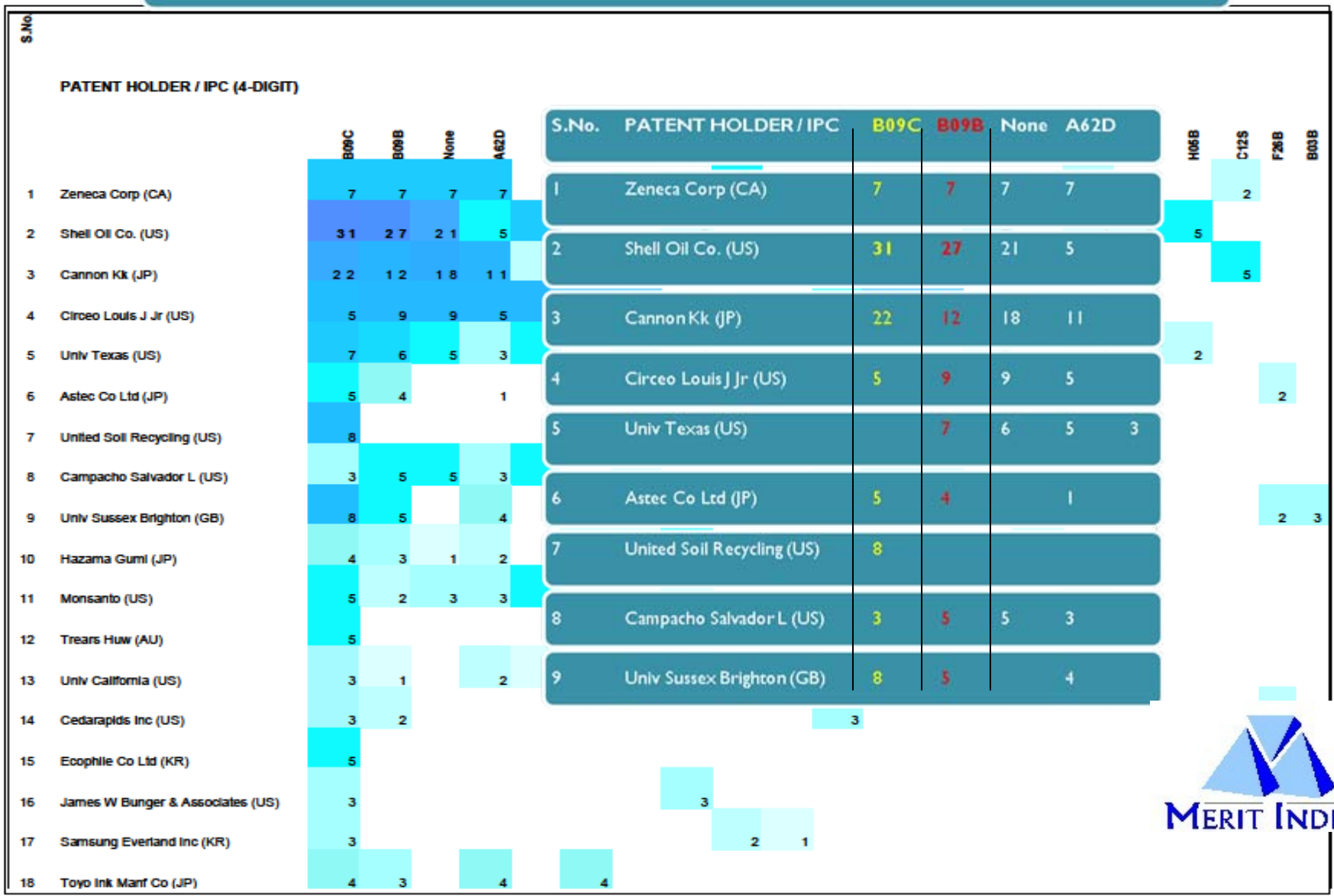
Technology Status

A Closer look on IPC Codes!



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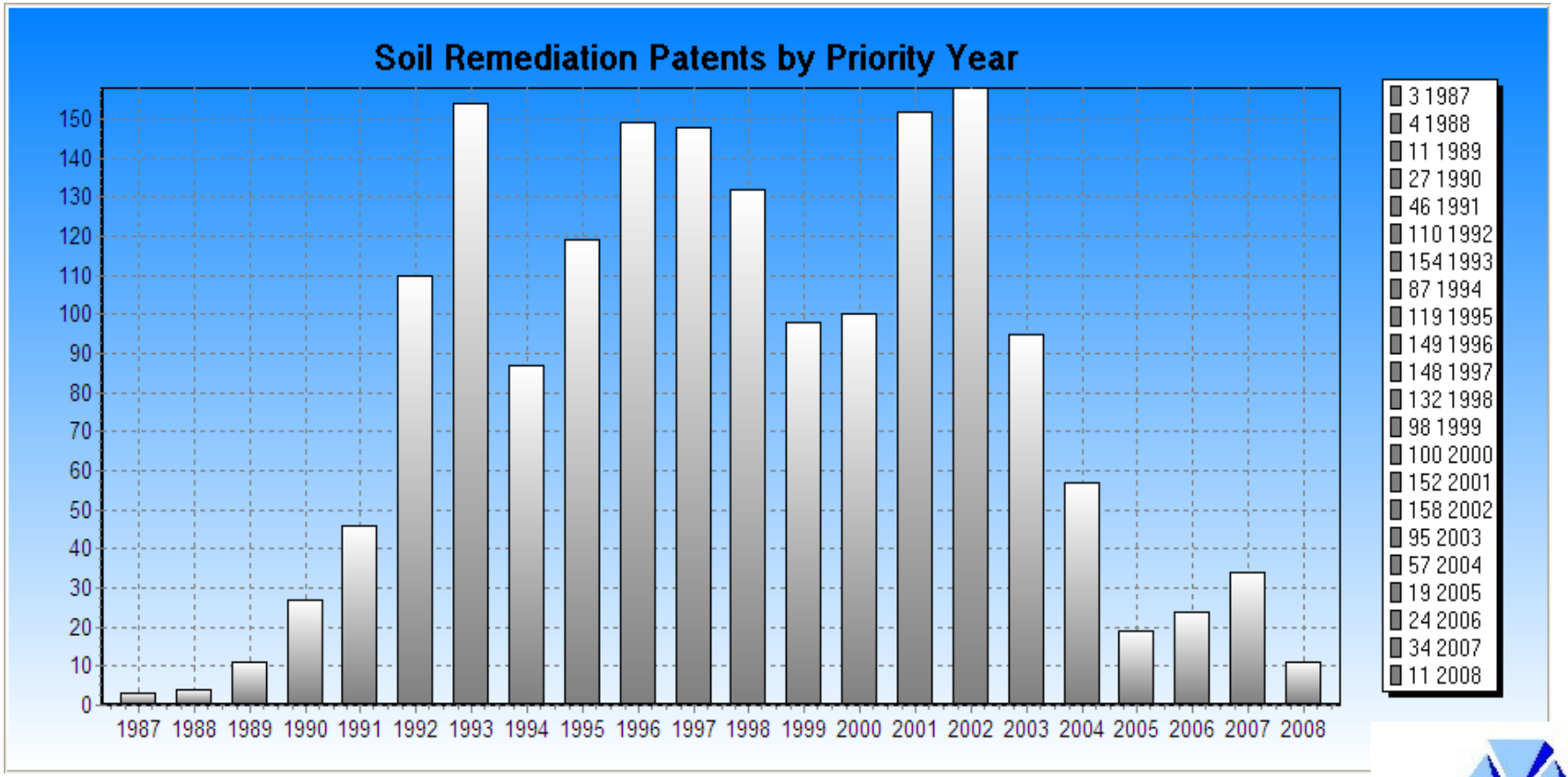
Life of Patents on Remediation Technologies



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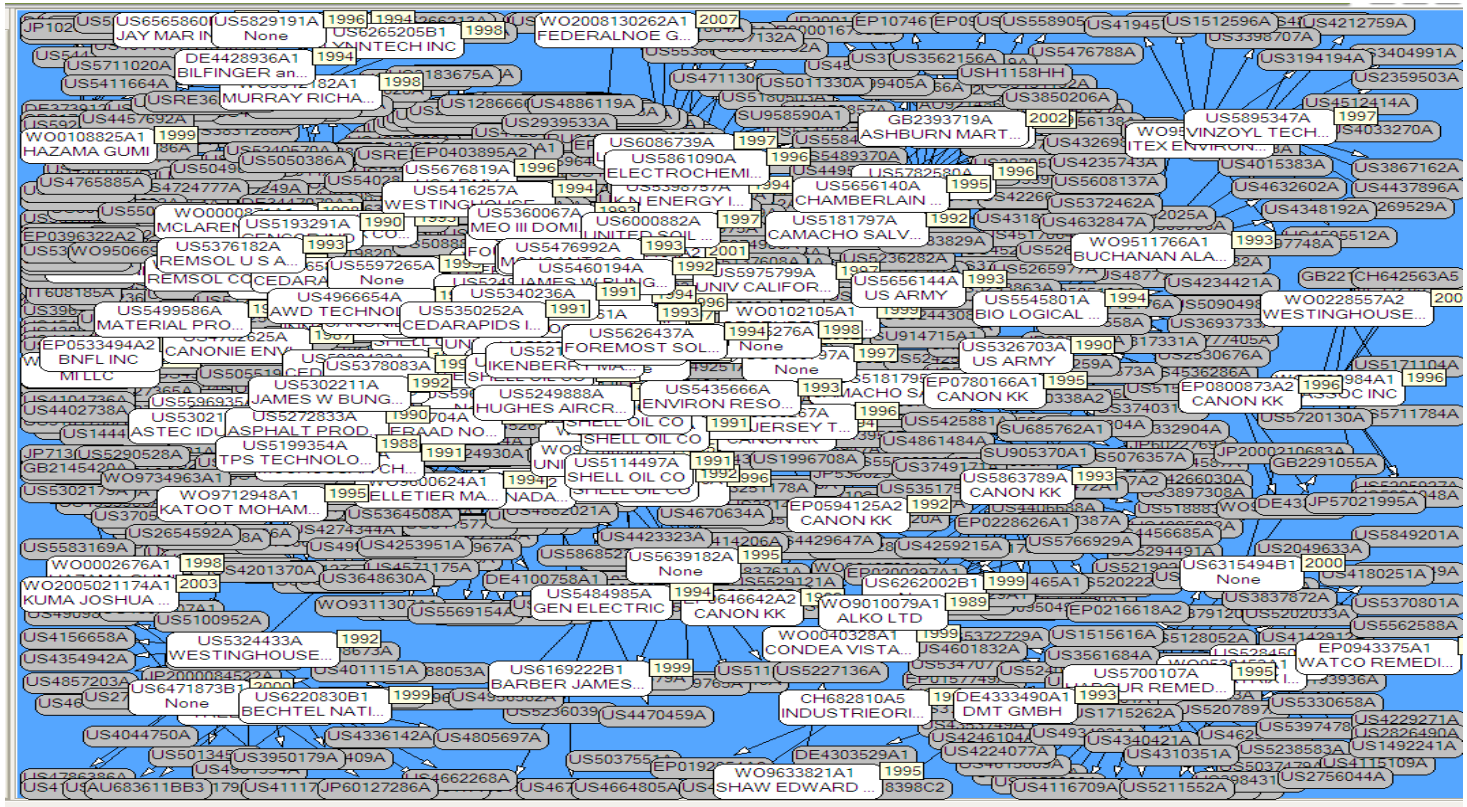
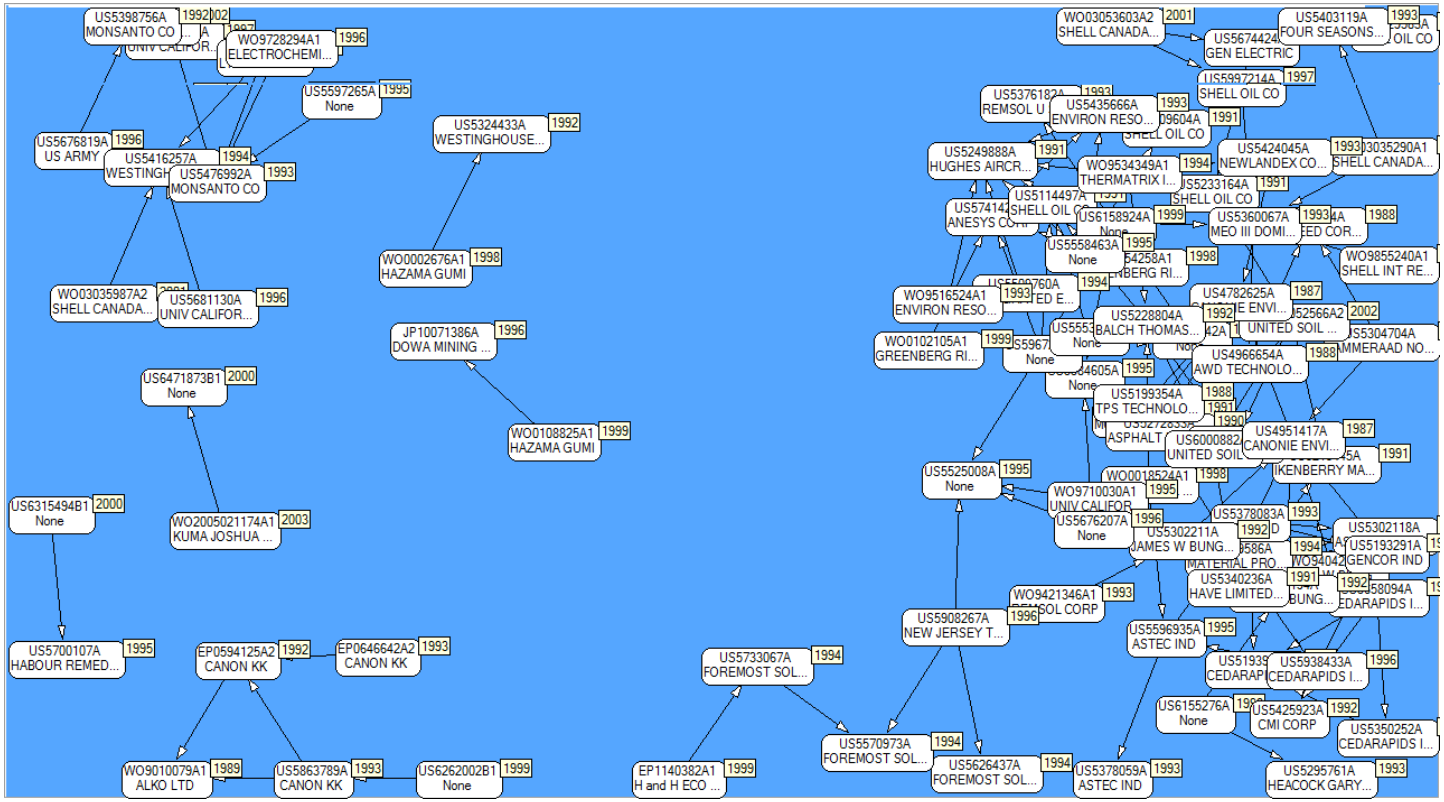
Citation Analysis



Citation Analysis



Conclusion

Patent literature - a potent source of assessing technology status in any field.

In soil remediation field, important technologies have been developed and patented between 1990 and 2004.

The current rate of technology development is in the consolidation phase with various approaches having been fully explored.

About equal research efforts seem to have gone for developing decontamination technologies employing

- **i) chemical treatment**
- **ii) heat treatment,**
- **iii) biological methods and**
- **iv) extraction through washing and leaching.**

- In addition, electro-chemical processes have also been tried vigorously at many place

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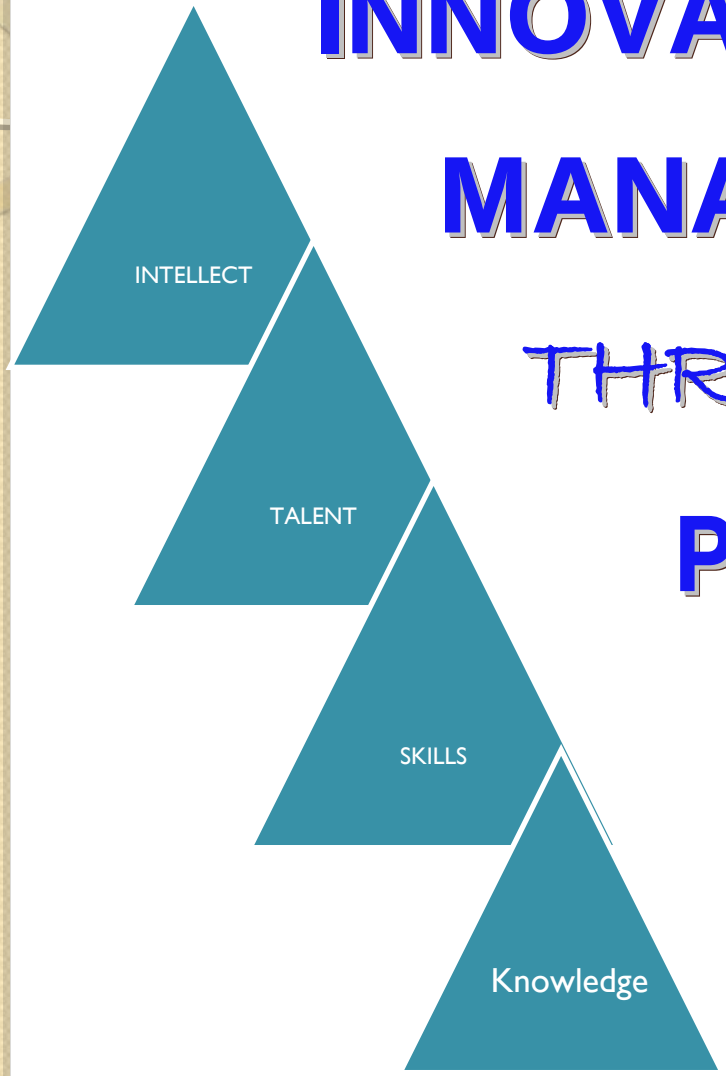
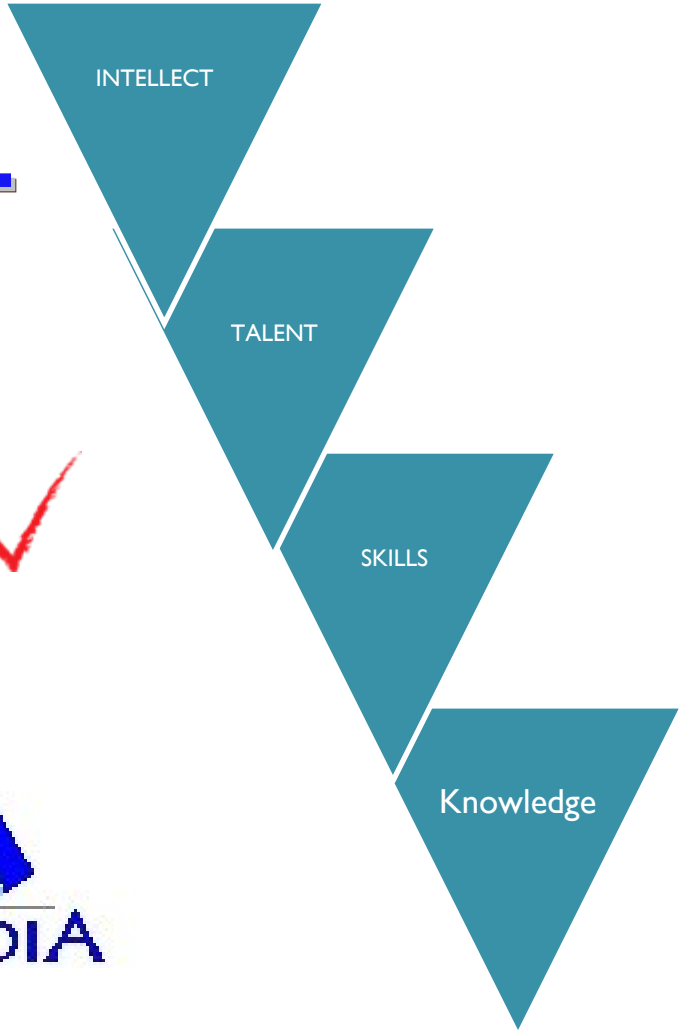
INNOVATION MANAGEMENT THROUGH PATENTS





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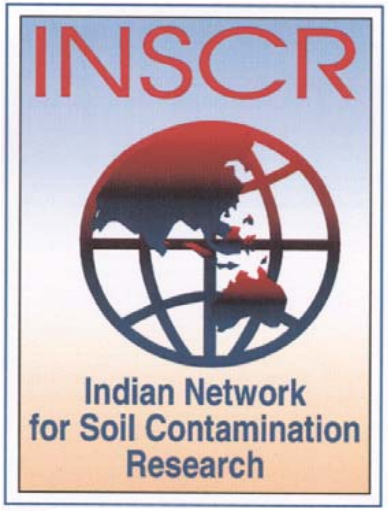

Society of Researchers in Soil Contamination Research and related fields registered in India

Founded 1999

Regularly organising international and national conferences

Thank you!

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