

# Zeolite Patents

Starting with this issue of *TEMPLATE* the BZA intends to add a column in *TEMPLATE* which intends to make you aware of interesting patents employing zeolites. The vast number of patents using zeolites (see graph) make it necessary to streamline and select the interesting applications. This is highly subjective and so I would urge the community to inform me of any patents of interest to be included in future issues of *TEMPLATE*.

## Michael Stockenhuber

Figure 1 shows the number of patents published worldwide since 1980. A steady increase in applications employing zeolites can be observed. This is a clear indication for the great industrial interest, innovative power of the community and applicability of zeolites.

The traditional applications of zeolites like catalysis and adsorption are still the main patents applied for. For instance a patent applied for in Brazil<sup>1</sup> using iron oxides to be able to remove zeolite adsorbents by magnetic means is a very interesting idea. More traditionally, a world patent employing metal complexes to obtain highly dispersed metals in zeolites for Fisher Tropsch catalysts<sup>2</sup> was reported this year, as well as a method to perform epoxidation with a zeolite catalyst<sup>3</sup>. Another world patent concerning hydroisomerisation to produce lubricants using mixtures of zeolites was applied for this year<sup>4</sup> and a method to prepare dimethylether from methanol over metal exchanged zeolites was recently patented<sup>5</sup>. Gasification

of biomass with zeolites<sup>6</sup> is a patent trying to develop renewable source energy production. A wide variety of patents uses the shape selectivity of zeolites to obtain the improved product yield, such as in xylene formation and isomerization.

A method of purifying MTBE product streams with zeolite 13 X and Y was patented in the US<sup>7</sup>. In zeolite preparation, zeolites prepared from fly ash<sup>8</sup> and various preparation methods for nanocrystalline zeolites<sup>9,10</sup> can be found. Zeolites are also used as antibacterial agents in antiperspirants<sup>11</sup> and as fluorine carrier and abrasive in toothpaste<sup>12</sup>. A self heating cosmetic mask using a zeolite was patented by Beiersdorf<sup>13</sup>. An air permeable mortar using zeolites was applied for<sup>14</sup> and a heat transfer system utilizing adsorption properties of zeolites was suggested<sup>15</sup>.

I think the variety and abundance of patents applied for and granted indicates the enormous versatility and applicability of zeolites and I believe we can look forward into a bright future.

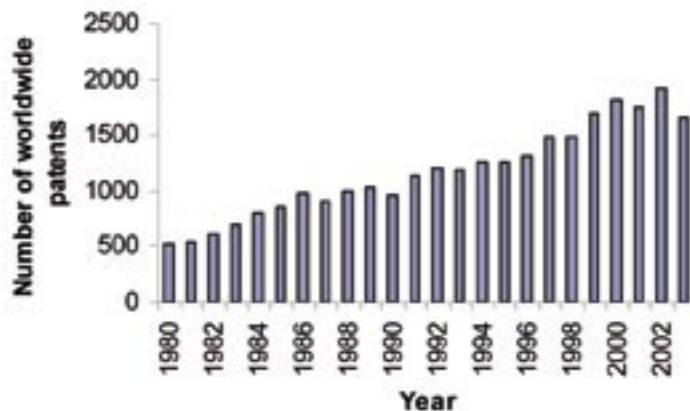


Figure 1. Worldwide patents published using zeolites from 1980 to 2003

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## See you at BZA 2005 Bath

### Arthur Garforth

The 2005 BZA meeting will be held between 4<sup>th</sup>-6<sup>th</sup> April 2005 at the University of Bath, a leading UK university with an international reputation for quality teaching and research. The university is set in a landscaped campus with excellent sporting facilities and ample parking, located one mile from the World Heritage Site of the City of Bath. The conference will be held in a modern lecture theatre located on the central university parade, close to the catering and residential

facilities. Bath itself is a compact city known for its beautiful architecture ranging from the Roman baths and sweeping Georgian terraces to the newly built Bath Spa Project which uses the water from the ancient hot springs. Much of the city is built from the local honey-coloured stone that gives Bath its mellow and indefinable quality. The city is also home to many museums and art galleries displaying the history of Bath, its connection with the author Jane Austen and Georgian society, as well as the museums of East Asian Art and

Costume. The modern city of Bath is known for its variety of specialist shops lining the old streets and covered walkways creating a unique shopping area. Bath is easily accessible by train and road, and has a frequent bus service to the university from the centre of town.

The 2005 BZA meeting will follow the established pattern



for annual BZA conferences: short original papers with emphasis on those from young research workers, interspersed by plenary and invited lectures and a poster session. All aspects of science relevant to nanoporous materials will be covered and contributions covering synthesis, characterisation and applications are all welcome.



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# TEMPLATE 2004

The Official Newsletter of the British Zeolite Association



## Chairman's Chat

Hallo, and welcome to "Template", the BZA's occasional multi-purpose publication.

It is nice to be able to report good news, so firstly I'd like to congratulate the 3 winners of the travel bursary competition: Joseph Fox (University of Edinburgh), Yuni Krisnandi (University of Aberdeen), and Misbah Sarwar (RI) all of whom produced excellent, and very readable articles which you can see later in this issue. I gather that a good time was had in South Africa, and hope that the prize of £500 went a long way to paying for the trip.

On the subject of conferences, I'd like to share a few thoughts with you on the subject of "What are conferences for?"

The dictionary informs us that "conference" comes from the Latin "To bring together" (aww, isn't that nice.....), and defines a conference as:

- A meeting for consultation or discussion.*
- An exchange of views.*
- A meeting of committees to settle differences between two legislative bodies.*
- An assembly of clerical or of clerical and lay members from a particular district in various Protestant churches.*
- Sports. An association of teams.*
- The act of conferring, as of an academic degree.*

I'll avoid the opportunity to make facetious comments about definitions c) to f), and stick to a) and b). In order to accomplish a) and b), you need to meet and talk to people at the conference.

The human mind likes learning new stuff, think of the kick you get when you get a good result in your research ("Whay-hey, I'm the first one to spot this!"). You can get a similar kick if, as a result of a conversation at a conference, your research takes a leap forward.

So if you see something you are interested in, and are not confident enough to ask a question, then catch up with the presenter later on and ask them. Also, if someone is asking you a question about your work, remember they are not testing you, they are genuinely interested, so don't be afraid to discuss it, remember, you are the expert in your own work.

Let me bore you with an, "I remember when" story. My first conference was the BZA conference of 1989, I had never been to a conference before, I had no idea what went on at them, and my expectation was that it was another series of lectures I had to go to.

I was standing looking at a poster, and the author came up and asked if I had any questions, my thought process then did something along the following lines ["If I say anything, they'll know that I don't know anything about the subject, and I'm supposed to cos I've been doing it for at least 6 months now and I haven't read the background papers properly, so they'll think I'm an idiot and I didn't wash behind my ears this morning and..."], and I eventually said "Ummm, not really" and slunk

away, despite the fact I just wanted to ask them "Emm... what is this poster all about?"

So this is a request to both students and supervisors. Firstly supervisors, have you told your students why they are going to a conference, or have you just "assumed" they know. In order to get the most out of a conference you don't need to attend every single lecture and take copious notes, what you do need to do is mix with people outside the conference hall, as well as listening to the talks.

Secondly, Students, meet people, don't be afraid to admit your ignorance; finding out something new is a great kick.

Above all, enjoy it!

Hope to see you in St Andrews.

All the best,

*Keith*

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